DOCUMENT RESUME

ED 273 836 CE 045 077

AUTHOR Still, Steven
TITLE Ornamental Annual Plants and Their Uses. Slide Script.
INSTITUTION Ohio State Dept. of Education, Columbus. Agricultural Education Service.; Ohio State Univ., Columbus. Agricultural Curriculum Materials Service.
REPORT NO AGDEX-281/86
PUB DATE 85
NOTE 50p.; Photographs may not reproduce well.
AVAILABLE FROM Ohio Agricultural Education Curriculum Materials Service, 2120 Fyffe Road, Room 254, Columbus, OH 43210-1099 ($3.75; slides and script--$76.20).
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Agricultural Education; Agricultural Skills; Botany; *Floriculture; Learning Activities; *Ornamental Horticulture; *Plant Growth; *Plant Identification; Postsecondary Education; Scripts; Secondary Education; *Vocational Education

ABSTRACT

This slide script, part of a series of slide scripts designed for use in vocational agriculture classes, deals with ornamental annual plants and their uses. Included in the script are narrations for use with a total of 254 slides illustrating 97 different plants. At least two slides are provided for each plant: one shows the growth habits of the plant, and the other is a close-up of the flower or foliage. Plants are listed alphabetically by scientific name, and popular varieties and cultivars are names where appropriate. At the end of the script are two indexes: one for scientific names and the other for common names. The introduction to the script also includes suggestions for its use and recommended additional learning activities. (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED273836

AGDEX 281/86

ORNAMENTAL ANNUAL PLANTS AND THEIR USES

Slide Script

Steven Still, Ph.D.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
Ohio Ag Ed Curric Matls Service
R Roediger
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CE 045077

OHIO AGRICULTURAL EDUCATION CURRICULUM MATERIALS SERVICE

Agricultural Education Service
State Department of Education

and

Department of Agricultural Education
The Ohio State University

ACKNOWLEDGMENTS

Steven Still is a professor of landscape horticulture at The Ohio State University. Dr. Still is author of the book *Herbaceous Ornamental Plants* and numerous horticultural articles. He also serves as executive secretary for the Perennial Plant Association. Dr. Still has led a number of tours to the formal gardens of Great Britain and western Europe.

Early planning and organization of the project was directed by A.W. Welch. Editing and layout were done by Muriel N. King. Phototypesetting was done by Jacqueline A. Stuts.

James E. Cummins, Director
Agricultural Education Service
State Department of Education

Roger D. Roediger, Director
Ohio Agricultural Education
Curriculum Materials Service

Copyright©, 1985

Ohio Agricultural Education Curriculum Materials Service
The Ohio State University

All rights reserved

Ohio Agricultural Education Curriculum Materials Service
The Ohio State University
Room 254, 2120 Fyffe Road
Columbus, Ohio 43210

1985

The Ohio Agricultural Education Curriculum Materials Service, as a part of The Ohio State University, is an equal opportunity employer and does not discriminate against any individual for reasons of race, color, creed, religion, national origin, or sex. All instructional materials provided by the Ohio Agricultural Education Curriculum Materials Service are available on a non-discriminatory basis without regard to race, color, creed, religion, national origin, or sex.

FOREWORD

A major objective of this slide series, *Ornamental Annual Plants and Their Uses*, is to aid in the study and identification of commercially important ornamental annuals. The "annuals" included are composed of true annuals and certain biennials and perennials. The latter group is composed of plants that bloom the first year from seed but are killed by frost in northern areas. Many people describe these plants as "tender perennials" that are utilized as annuals.

Those involved in selling ornamental annuals should be able to identify the plants, help customers select plants for specific situations, and provide cultural tips as well. Those who grow or maintain ornamental annuals must also be able to identify the plant and the cultural requirements of each.

Ornamental Annual Plants and Their Uses contains slides of 97 different plants. At least two slides are used to illustrate each annual. One slide shows the habit of the plant; usually the other is a close-up of the flower or foliage. The plants are listed alphabetically by scientific name. Popular varieties and cultivars are named where appropriate.

Narration for the first slide of each plant is as follows:

000. ***Scientific name (genus and species)*** **Family name**

(Phonetic spelling of scientific name) Habitat

COMMON NAME

Description

At the end of the script are two indexes: one for scientific names and the other for common names.

SUGGESTIONS FOR USE

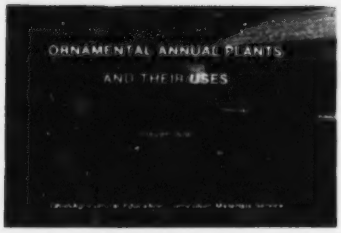
1. Review the slide series and script prior to presenting it. Consult other sources for additional information.
2. Determine which plants are in common usage in your area, then adapt the series to reflect your local situation.
3. Before presenting this series, make sure viewers have some knowledge of the culture and uses of ornamental annuals and of terminology related to plant growth. Then decide how much and what type of additional information your viewers need to know.
4. Add your own information and comments or those of your viewers to make the series relevant to your local situation.

SUGGESTIONS FOR ADDITIONAL ACTIVITIES

1. Visit a local producer to observe how ornamental annuals are grown and used. Have the grower or manager explain the practices employed.
2. Do a survey of the types of plants available locally.
3. Devise experiments comparing the adaptability of certain plants to various landscape conditions.
4. Integrate several annual plant species into the cropping schedule of your greenhouse.
5. Plant ornamental annuals in the school landscape or the landscapes of local businesses.

ORNAMENTAL ANNUAL PLANTS

AND THEIR USES



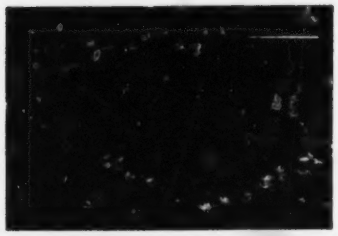
1. By definition, an annual is a plant that lives for only one growing season. It germinates from seed, grows, blooms, sets seed, and dies at the end of the year.

2. Annuals are almost unlimited for landscape use.

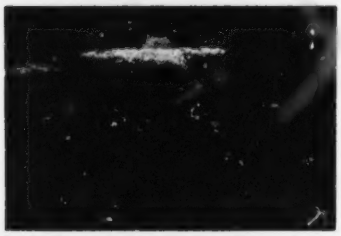
3. Annuals are used for bedding purposes.

4. Annuals which are grouped together in a showy pattern, often a geometric one meant to be viewed from above, are referred to as bedding plants.

5. Some are considered carpet bedding plants. . . .



6. . . . and are often used in formal gardens.

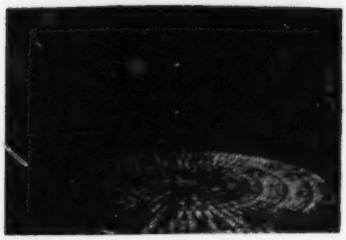


7. Very formal displays can be created with annuals.

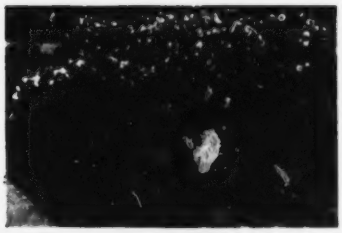
8. Some are almost life-like.

9. A border can be described as an ornamental strip of land which edges the house, . . .

10. . . . marks the boundary of a walk or driveway, outlines a patio, or surrounds a wall.



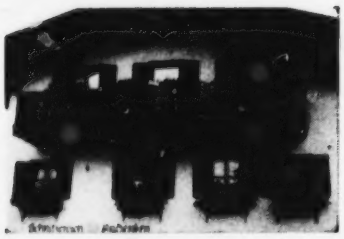
11. The border may be a mixture of annuals and perennials or one of annuals alone.



12. Annuals can also be used in a variety of other ways. Some gardeners still prefer annuals as cut flowers.

13. Many annuals can be used in containers, . . .

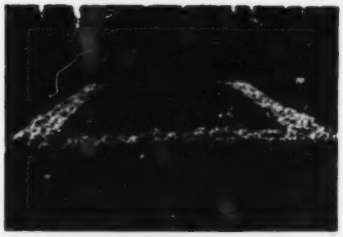
14. . . . either as hanging baskets . . .



15. . . . or in window boxes.

16. Annuals can provide a bright summer color to raised beds.

17. Differences among annuals in adaptability to exposures and soils allow the gardener to have attractive annuals regardless of the site. Some annuals do well in shade; . . .



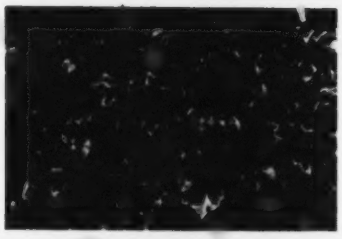
18. . . . others perform well in full sun.

19. An annual in any situation is an amply rewarding garden addition.

20. ***Abutilon pictum*** **Malvaceae**
(a-bu'ti-lon pik'tum) Habitat: Native to Brazil
FLOWERING MAPLE

Abutilon has maple-like leaves which may be 3-, 5-, or 7-lobed. This tropical shrub is grown as a bedding plant in northern areas. The flowers are shaped like those of hollyhock and are yellow, yellow-orange, or pink in color. Although the flowers are attractive, flowering maple is probably planted most often for its variegated foliage. An example of this is the cultivar 'Thompsonii,' shown here, which has large green and yellow leaves and pale orange or pinkish flowers. Flowering maple performs well in full sun and a well-drained soil.

21. *Abutilon hybridum* var. *savitzii*,. . .

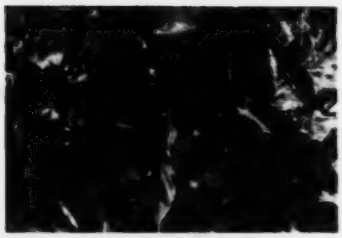


22. . . . with its very striking green and white leaves, resembles a variegated maple (*Acer*).

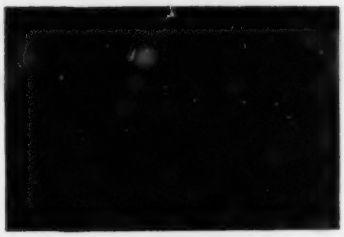
23. ***Acalypha wilkesiana*** **Euphorbiaceae**
(ak-a-li'fa wil-kes-ee-ay'na) Habitat: Native to the Pacific Islands

COPPERLEAF, JACOB'S-COAT,
FIRE-DRAGON, BEEFSTEAK PLANT

Copperleaf is a tropical shrub that is grown as a permanent woody plant in Zone 10. In northern areas, the colored-leaved types are used for summer bedding and grow 12 to 18 inches tall.

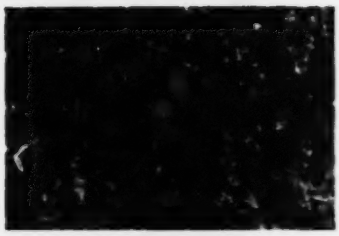


24. 'Marginata' is an attractive cultivar that has greenish bronze leaves with a pink margin. The unusual foliage is the ornamental attribute of copperleaf. It is grown in full sun in a well-drained soil.



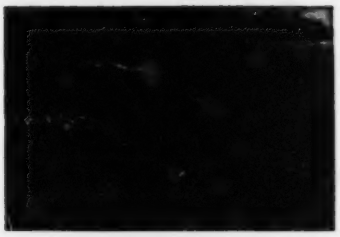
25. ***Ageratum houstonianum*** **Compositae**
(a-jer-ay'tum hos-to-nee-ay'num) Habitat: Native to Central and Southern Mexico
MEXICAN AGERATUM, FLOSSFLOWER

Ageratum is a 6- to 12-inch-tall plant which forms a broad mound. The leaves are alternate, ovate to triangular, with a crenate margin. The leaves are pubescent on both sides.

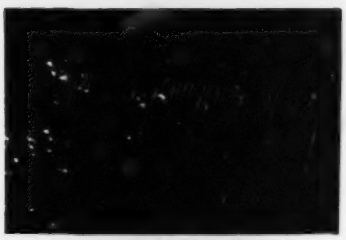


26. The flower heads are ¼ inch across, borne in cymose clusters that are lavender, blue, pink or white depending on the cultivars, which are numerous.

This species performs well in sun or partial shade. In areas where summers are hot and dry, light shade is preferable to full sun. Ageratum is basically free from problems, though root rot and powdery mildew occasionally appear.



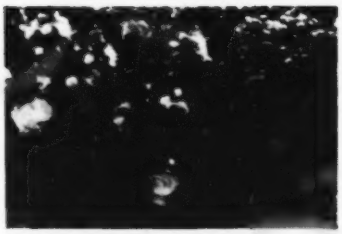
27. Ageratum is one of the more dependable flowering annuals; it often blooms all through the season until frost. It is excellent for use as an edging plant, border plant, or container plant. Ageratum was formerly called *Ageratum mexicanum*.



28. ***Alcea rosea*** **Malvaceae**
(al-se'a ro'ze-a) Habitat: Native to China
HOLLYHOCK

Hollyhock is a biennial that will flower the first year from seed when grown in the greenhouse during the winter. It is one of the tallest plants that is utilized as an annual, growing up to 8 feet tall. The spire-like habit of hollyhock relegates it to the background of a border or against a fence or wall. It blooms for two to three months in the heat of the summer.

29. Flowers are available in yellow, pink, lavender, red and silver. Hollyhock performs best on well-drained sites in full sun. Anthracnose, rust, leaf spot, spider mites and Japanese beetles are problems of hollyhock.



30. Some of the smaller-growing cultivars are: 'Majorette' (shown here), a 1976 All American selection, 24 inches tall, with double flowers; 'Silver Puffs,' a 24-inch-tall biennial with silver pink, double flowers; and 'Summer Carnival,' a medium-sized selection that grows 5 to 6 feet tall. Hollyhock was formerly called *Althaea rosea*.

31. ***Alternanthera ficoidea*** **Amaranthaceae**
(al-ter-nan'ther-a fie-koi'de-a) Habitat: Native from Mexico to Argentina

JOSEPH'S-COAT, COPPERLEAF, GARDEN ALTERNANTHERA

Alternanthera is a genus containing compact, tropical, colored-leaved plants which are used for edging . . .

32. . . . or in carpet bedding. The flowers are inconspicuous. The colorful leaves provide the ornamental feature.

33. For formal effects, Joseph's-coat can be sheared. *Alternanthera* has a mounded or rounded habit and grows 6 to 12 inches tall. This species grows best in full sun. Since only the cultivars with colorful foliage are used, propagation is vegetative. Stock plants can be dug in the fall, potted, and wintered as house plants or placed in a cool greenhouse. Tip cuttings are taken in very early spring before the growing season starts.

34. Some cultivars of note are: 'Aurea nana' — green and yellow variegated foliage; 'Haentze's Red Sport ' (shown here) — pink, yellow and green variegation; and 'Bettzickiana' — leaves patterned with red and yellow.

35. ***Amaranthus tricolor*** **Amaranthaceae**
(am-a-ran'thus tri'kul-er) Habitat: Native to India and Philippines

JOSEPH'S-COAT, TAMPALA

Amaranthus is a strong-growing, coarse annual from the tropics that is a "kissing cousin" to the common pigweed. The ornamental foliage, with bold splashes of color, makes this plant a candidate for specimen use. In fact, the bright colors can overwhelm a garden if the plants are not used with discretion.

Joseph's-coat grows 3 to 4 feet tall. It should be planted in average to dry soil in full sun. After transplanting, *Amaranthus* should be watered sparingly to deter root rot. Stem borers can also be a problem.

36. Cultivars include: 'Early Splendor,' with pendant scarlet foliage and branches; . . .

37. . . . 'Illumination,' shown here with the upper third of its foliage a bright scarlet with orange and yellow centers; 'Molten Fire,' with dark red foliage and poinsettia-like heads; and var. *salicifolius* 'Flaming Fountain' with brilliant red foliage.

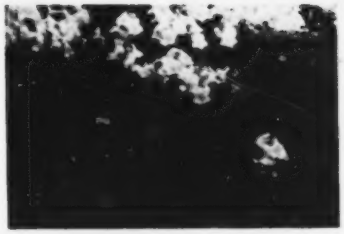
38. *Amaranthus caudatus* ("love-lies-bleeding" or tassel flower) is a related species with long, drooping inflorescences bearing dark red flowers which are frequently so long that the tips touch the ground.

39. ***Antirrhinum majus*** **Scrophulariaceae**
(an-ti-ri'num ma'jus) Habitat: Native to the Mediterranean region

SNAPDRAGON

Snapdragon is a popular annual that is used as a bedding plant, massed in the border, or as a cut flower. The dwarf types are useful as edging plants. A gardener can have snapdragons ranging in height from 6 inches to 3 feet.

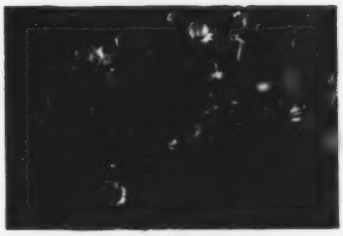
40. Snapdragon flowers all summer. Pinching and removal of all florets are required for good flowering. Flower shades include orange, pink, red, yellow, lavender, bronze and others. Best growth occurs in sun or partial shade and in well drained soil. Snapdragons may self-sow and produce seedlings the following spring. With winter protection snapdragon may remain a perennial, but for general garden use it should be treated as an annual.



41. Snapdragons are divided into three groups by height. Small or dwarf cultivars include 'Pixie,' 'Floral Carpet,' 'Promenade,' and 'Little Darling' (shown here). Medium cultivars (18 to 24 inches) are represented by 'Coronette.' Tall cultivars (36 inches) include the 'Butterfly' strain and the 'Rocket' strain (shown in #39).

42. ***Arctotis stoechadifolia*** **Compositae**
(ark-to'tis sto-chad-i-fo'lee-a) Habitat: Native to Africa
AFRICAN DAISY, BLUE-EYED AFRICAN DAISY
ARCTOTIS

The daisy-like flowers of African daisy are 3 inches across on stems longer than the leaves. The disk flowers are violet and the ray flowers are creamy white. Hybrid strains are sold with flower colors of red, pink, yellow and orange. Flowering occurs from mid through late summer.



43. The leaves of African daisy are alternate, oblong or obovate, slightly toothed, and woolly white. The plant can be grown in full sun and will withstand drought. It is utilized in the border and as a cut flower. There are no serious disease or insect pests. The variety *grandis* has a height of 18 to 24 inches, which is taller than the species, which is usually 12 inches in height.

44. ***Begonia* x *semperflorens-cultorum*** **Begoniaceae**
(be-go'ni-a sem-per-flo'renz kul-to'rum) Habitat: Native to Brazil

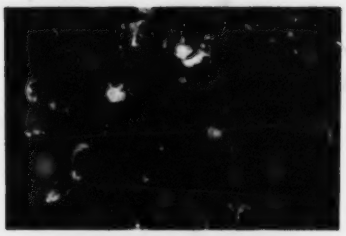
FIBROUS-ROOTED BEGONIA, BEDDING BEGONIA, WAX PLANT, WAX BEGONIA

The begonia is among the most versatile of bedding plants. It is useful and attractive in borders . . .

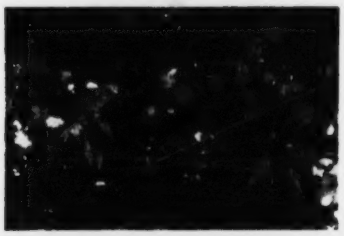
45. . . . and in beds, pots and baskets. Begonias are valued for perpetual and profuse bloom, low care, and brilliant flower colors. Begonia is a good choice for shady areas. It will also do well in full sun if the soil is kept moist.

46. The bronze-leaved types do better in the humidity and heat of southern climates.

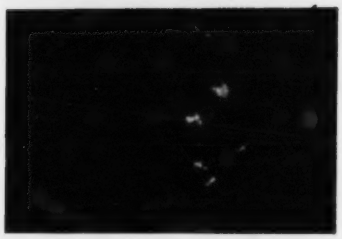
47. Begonia has alternate, glossy, ovate to broad ovate leaves which are succulent in texture. The flowers, either single or double, are borne in small axillary clusters. Flowering occurs all season long.



48. Flower colors are white to shades of red or pink. Plant height varies from 6 to 12 inches. The choice of F1 hybrids is wide and any good seed catalog can provide descriptions.



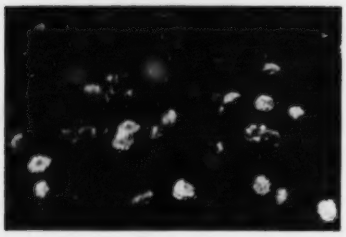
49. *Begonia* x *tuberhybrida* (tuberous begonia) is a related species that is usually grown from tuber corms that do not overwinter, but are planted out each spring. It is used as a bedding plant in shaded, protected spots under trees, in window boxes, or in hanging baskets. Flowers come in a wide array of colors — white or shades of pink, rose, or orange.



50. 'Non-Stop' is a cultivar selection that is grown from seed rather than tubers.

51. ***Bellis perennis*** **Compositae**
(bel'is per-en'is) Habitat: Native to Europe
ENGLISH DAISY, TRUE DAISY

English daisy is a tufted plant with flower stalks 8 inches tall. The peak bloom of this biennial is from April to June in Zone 5.



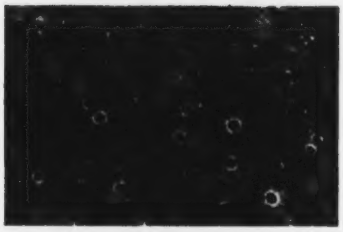
52. In climates suitable for its growth, English daisy is an excellent plant for the border front, for edging, or for mass effects. It complements spring bulb plants in rock gardens and is suitable for wild flower beds.

English daisy is well named, for it grows beautifully and profusely in the cool, humid spring and early summer of the countryside in England. It prefers a cool, moist, fertile soil with abundant organic matter and full sun or light shade. In many parts of the United States, the hot summer sun is detrimental. The plants need supplemental water during the summer and benefit from a light mulch in northern areas.

Bellis does not come true from seed. To maintain a cultivar, division should be practiced.

53. ***Brachycome iberidifolia*** **Compositae**
(bra-kik'o-me i-be'ri-di-fo'lee-a) Habitat: Native to Australia
SWAN RIVER DAISY

The leaves of this species are pinnately dissected into linear segments, creating a fine textured foliage. Swan river daisy is 9 to 15 inches tall and has a round habit.



54. The daisy-like flowers, about 1 inch across, are borne on slender peduncles. The ray flowers are blue, violet, rose or white.

Brachycome grows best in well-drained soil in full sun. It does not perform well in hot weather. Flowering is very good in early summer but thins in the dry heat of middle and late summer. There are usually no serious pest problems.

55. ***Brassica oleracea*** **Cruciferae**
(bras'i-ka o-ler-a'se-a) Habitat: Native to Europe
FLOWERING KALE, ORNAMENTAL KALE

Flowering kale is a biennial, but it is usually grown as an annual. The leaves are thick and glaucous like cabbage and are arranged in a loose rosette. The showy blue-green leaves open from the center. The centers are usually white or tinged with pink, red, or purple.

56. Flowering kale grows 12 to 15 inches tall. It performs best in well-drained soil in a sunny location. Flowering kale is in the mustard family which contains plants that grow best in cooler temperatures. The leaf colors of this plant are brightest in cool fall temperatures. Flowering kale and flowering cabbage, very similar species, are often sold interchangeably or as a mixture.

57. 'Dynasty Pink,' with pink-tinged foliage, and . . .

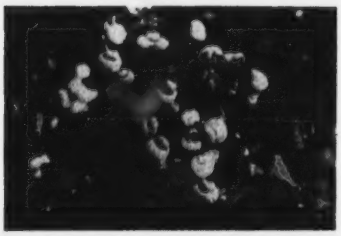
58. . . . 'Dynasty Red,' with purple-red foliage, are two cultivar selections.

59. ***Browallia speciosa*** **Solanaceae**
(bro-wal'i-a spee-see-o'sa) Habitat: Native to Colombia
BROWALLIA, AMETHYST FLOWER,
SAPPHIRE FLOWER, LOVELY BROWALLIA

Browallia is a dependable flowering annual with blooms throughout the season. The flowers are star-shaped with a tubular corolla and come in blue, white or violet.

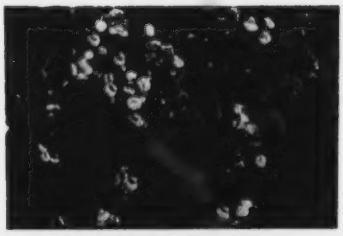
60. Browallia is useful as a bedding plant in the shade, in pots and urns, or in hanging baskets. Flower color is best when the plant is shaded from the afternoon sun. Plants may be wintered as houseplants.

The following are some of the available cultivars: 'Blue Bells Improved' — lavender-blue; 'Marine Bells' (shown here) —indigo blue, more compact than 'Blue Bells Improved'; 'Silver Bells' — snow-white flowers; 'Sky Bells' — clear powder-blue flowers; and 'Jingle Bells' — compact plants with flowers in white, blue and lavender.

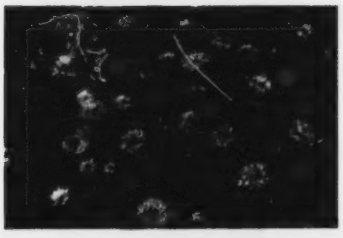


61. ***Calceolaria crenatiflora*** **Scrophulariaceae**
(kal'see-o-lair'ee-a kre-na'ti-flo'ra) Habitat: Native to Mexico
CALCEOLARIA, POCKETBOOK FLOWER,
SLIPPER FLOWER, SLIPPERWORT

The genus name, *Calceolaria*, is derived from the Latin *calceolus*, meaning "slipper" or "little shoe," and refers to the shape of the flower. Pocketbook flower is usually considered a greenhouse potted plant. However, there are selections that can be grown as bedding annuals.



62. 'Goldari,' shown in these slides, is such a selection: 12 inches tall with bright yellow flowers. It is listed as heat-tolerant and performs well in sun to partial shade. 'Goldari' is also self-cleaning, so it does not require dead heading.



63. ***Calendula officinalis*** **Compositae**
(ka-len'du-la o-fis-i-nay'lis) Habitat: Native to Mediterranean area
CALENDULA, POT MARIGOLD

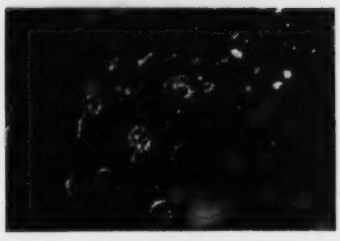
Pot marigold is a cool season annual that grows from 12 to 24 inches tall and has a round growth habit. The flower heads are solitary and are borne on stout stems.

64. The flowers are yellow or orange and are present after bulb plants finish flowering and until the beginning of autumn. Peak bloom is in early summer.

65. *Calendula* is useful as a bedding or border plant or as a cut flower. Best growth occurs in full sun in well-drained moist soil. Flowering is best in cool weather. Cultivars that do better in hot summers are 'Coronet' and 'Pacific Beauty'. Aster yellows can affect *Calendula*, causing a yellowing of the foliage and deformed flower heads.

66. ***Callistephus chinensis*** **Compositae**
(ka-lis'tef-us chi-nen'sis) Habitat: Native to China
CHINA ASTER, ANNUAL ASTER

This annual has alternate leaves which are broadly ovate and deeply and irregularly toothed. The flower colors are white, pink, red, blue, lavender, or purple with yellow disk flowers. Flower heads can be as large as 6 inches in diameter.



67. Plant height is usually 24 to 30 inches, but there are dwarf bedding asters, shown here, that are only 8 to 12 inches tall and have a round habit.

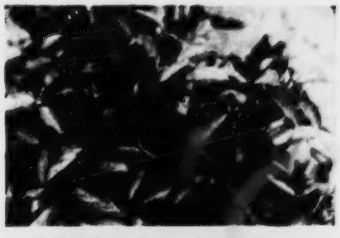
China aster is probably best known as a cut flower, but the smaller cultivars are very suitable as bedding plants. This plant should be grown in areas of sun or light shade in slightly basic soil.

Aster yellows and stem rot are troublesome diseases which have no fungicidal control. A gardener should plant wilt- or rot-resistant cultivars. Aster yellows can also be curtailed by controlling the six-spotted leafhopper with insecticide sprays. 'Dwarf Queen' is an example of a wilt-resistant selection.

68. ***Capsicum annuum*** **Solanaceae**
(kap'si-kum an'u-um) Habitat: Native to tropical America

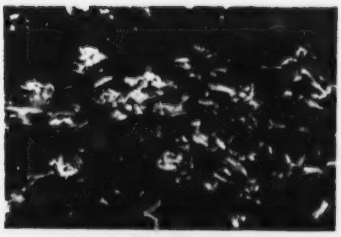
BUSH RED PEPPER

Bush red pepper is an annual plant valued for its fruit rather than its flowers. The flowers are small and greenish white. The fruit, which is present from August to frost, can be red, yellow, or orange, . .



69. . . . purple or black. Some are variegated with white, green and light purple.

70. *Capsicum* grows about 12 inches tall and has a round growth habit. This species is very heat- and drought-tolerant and should be planted in full sun. Uses for bush red pepper are as an edging or bedding plant or in the border. There are no serious pest problems.



71. ***Catharanthus roseus*** **Apocynaceae**
(ka-thar-an'thus ro'ze-us) Habitat: Native to Madagascar and India

MADAGASCAR PERIWINKLE,
ROSE PERIWINKLE, OLD-MAID

Catharanthus is a tender perennial which is grown as an annual. The flowers are typically rose-pink, but vary to a light pink and white.

72. The growth habit is rounded and varies from 6 to 18 inches in height. Flowering is from May to October in Zone 5.

Periwinkle grows well in sun to light shade. Of all the bedding plants it is one of the most tolerant of heat and drought. It is an excellent plant for southern zones. Periwinkle can be used as a bedding plant, in borders, or as a summer ground cover. There are no serious pests of periwinkle. The "Little" series is a collection of cultivars which are 10 inches tall and more compact than other periwinkles.

73. ***Celosia cristata*** **Amaranthaceae**
(se-lo'se-a kris-tay'ta) Habitat: Native to Africa
COCKSCOMB, FEATHERED AMARANTH

The *Celosia* group is very diverse with heights varying from 6 to 36 inches, a wide range of colors, and flower forms that are crested or plumed (feather-form). Flowering occurs all summer. Both crested and plumed flower types do well cut or dried, as bedding and as border plants.

74. Dwarf selections, like these, are excellent for edging.

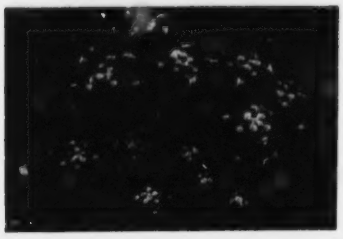
75. *Celosia* can be planted in full sun and tolerates dry, porous soils. In fact, too much water is detrimental, as stem rots may develop. Since both crested cockscomb and plume cockscomb thrive in hot climates, they are especially suited for southern gardens. The cultivar selection is very broad; selection can be made from the smallest to the largest in both types of *Celosia*.

76. ***Centaurea cyanus*** **Compositae**
(sen-taw're-a si-an'us) Habitat: Native to southeastern Europe

BACHELOR'S-BUTTON, CORNFLOWER,
BLUEBOTTLE

Bachelor's-button is an erect plant varying in height from 12 to 36 inches. The flowers are generally blue, but may also be purple, white, rose, red or deep wine. Peak flowering is in the early cool part of the season with intermittent flowering until frost.

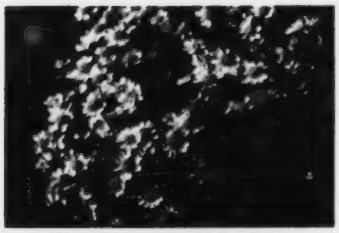
77. The leaves of *Centaurea cyanus* are linear and have a gray pubescence. The plant thrives in most soils and prefers full sun. It can be massed in borders and beds, in either the foreground or the background, depending on the height. Cornflowers are rather attractive during their main blooming period, but not so much later in the season. For massed color in beds, the lower growing cultivars are preferable. The tall cultivars are more vigorous but have a tendency to fall over if not supported.



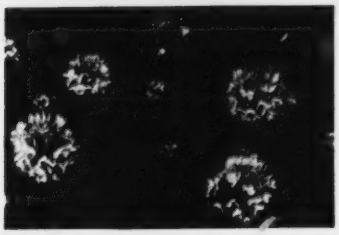
78. ***Chrysanthemum parthenium*** **Compositae**
(kris-an'the-mum par-thee'nee-um) Habitat: Native to Europe
FEVERFEW

Feverfew is a tender perennial that will flower the first summer from seed started indoors in April. Cultivars of this *Chrysanthemum* species vary in height from 12 inches (shown here) to 36 inches. The foliage is pinnatifid and aromatic.

Feverfew performs best in well-drained soil in full sun. Flowering is best in August and September.



79. 'Golden Feather' (white), shown here, 'Golden Ball' (yellow), and 'Snowball' (white) are available cultivars. *Chrysanthemum parthenium* was previously known as *Matricaria capensis.*



80. ***Cleome hassleriana*** **Capparaceae**
(kle-o'me has-ler-an'a) Habitat: Native to southeastern Brazil, Argentina
SPIDER FLOWER, CLEOME

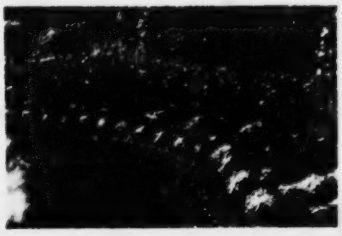
The leaves of cleome are palmately compound, usually with a pair of short spines at the leaf base. The foliage is strongly scented. Cleome flowers from June to October. The common name, spider flower, comes from the spider-like effect of the flower which is created by abnormally long stamens.

81. Spider flower is used as a background plant because of its erect habit and 3- to 4-foot height. Despite its height, cleome makes a delicate appearance.

Cleome does well in well-drained soil and full sun. It is trouble-free and easily grown. Cultivars of commerce include: 'Rose Queen' — rose-pink flowers; 'Pink Queen' — pink flowers; 'Helen Campbell' — white flowers; 'Cherry Queen' — cherry-rose flowers; and 'Royal Queen' — mixture of pink, lavender, purple, rose, red, and white flowers.

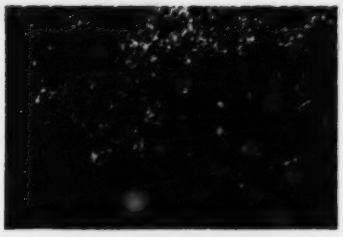
82. ***Coleus* x *hybridus*** **Labiatae**
(ko'le-us hi'brid-us) Habitat: Native to Java
COLEUS

Coleus is a tender perennial that is grown as an annual. The flowers are insignificant. This species is grown for the foliage color which may be chartreuse, yellow, pink, white, red or green with multiple leaf patterns. Plant height is 9 to 16 inches. Coleus performs best in partial shade.



83. Coleus should be planted in well-drained, moist soil. It is used in edging, borders (as shown), planter boxes, hanging baskets, bedding or carpet beds.

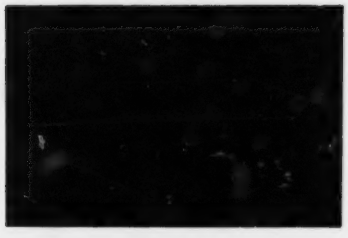
84. The choice in coleus is very large. There is seemingly a cultivar for every color, leaf shape, and variegation that one can imagine. Among the most important series or groups of coleus are: 'Rainbow,' 'Saber,' 'Carefree,' 'Dragon,' 'Fiji,' and 'Wizard'.



85. ***Coreopsis tinctoria*** **Compositae**
(ko-ree-op'sis tink-tor'ee-a) Habitat: Native to western and central United States

CALLIOPSIS, ANNUAL COREOPSIS, GOLDEN COREOPSIS

The foliage of calliopsis is very finely divided, producing an airy, fine texture. This species has a slender, erect habit, 2 to 3 feet high, with long-stemmed flowers that are useful for cutting.



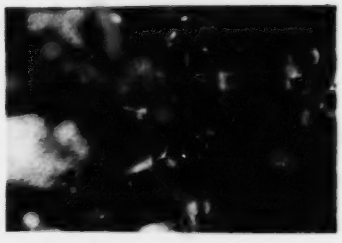
86. The flowers are single or semi-double and have bands of contrasting color. Some have yellow rays and brownish-purple centers; others are nearly solid brown or mahogany.

Coreopsis requires full sun and well-drained soil. In fact, this species will do well in hot, dry locations. It has a long summer bloom. In the seed trade, this species is often sold as *Calliopsis bicolor.*

87. ***Cosmos sulphureus*** **Compositae**
(koz'mos sul-fu're-us) Habitat: Native from Mexico to Brazil

YELLOW COSMOS, KLONDIKE COSMOS, ORANGE COSMOS

Klondike cosmos has pinnately cut foliage which creates a fine texture. Plant height is 18 to 30 inches.



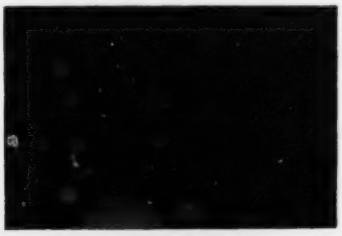
88. The ray flowers are pale gold, golden-yellow, orange, or red; disk flowers are yellow. Peak bloom is from June to October.

89. Cosmos can be used as background plants or cut flowers. It requires a full sun site and well-drained soil. Important cultivars are 'Sunny Gold' — semi-double, golden yellow, 14 inches high; 'Diablo' (shown in #88) — semi-double, orange-red; 'Gold Crest' (shown in #87) — gold; 'Lemon Twist' — bright yellow; 'Bright Lights' — mixture; and 'Sunset' — semi-double, vermillion.

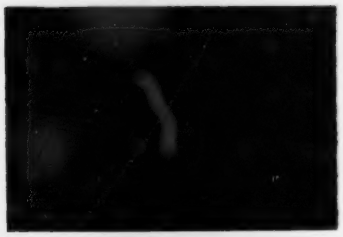
90. *Cosmos bipinnatus* (common cosmos) has very finely cut foliage and grows 4 to 6 feet tall. It is a fast-growing annual which can lodge easily. Flower colors are red, white, pink, violet, or lavender. Culture is the same as for yellow cosmos. Some of the cultivar selections are: 'Pinkie' — pink flowers; 'Purity' — white flowers; and 'Sensation' (shown here) — mixed colors.

91. ***Cuphea ignea*** **Lythraceae**
(ku'fee-a ig'nee-a) Habitat: Native to Mexico
MEXICAN CIGAR PLANT

This novelty annual is nearly 12 inches tall and is used in hanging baskets and as a bedding plant.



92. The plants have tubular orange-scarlet blooms, tipped with gray or black. Peak blooming period is June to October, initiating as the hotter, drier season arrives.



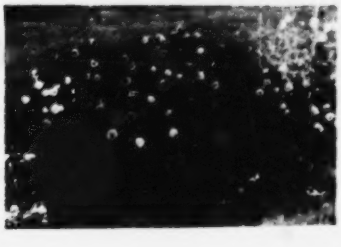
93. Cigar plant should be planted in well-drained soil in a full sun site.

94. A lesser known *Cuphea* species is *C.* x *purpurea* (cigar plant or cigar flower). The leaves and stems are pubescent.

95. The growth habit is round and the height is rarely greater than 12 inches. This species is used as edging and in borders, planters, or rock gardens. Whitefly can be a problem. The culture of this species is the same as for *Cuphea ignea*.

96. ***Dahlia*** hybrids **Compositae**
(dal'ya) Habitat: Native to Mexico
GARDEN DAHLIA

Garden dahlia is another perennial that is treated as an annual in all but the very southernmost reaches of the U.S. The composite flowers, usually double, are arranged in twos and threes on the branch terminal. Dahlia is propagated by seeds and by root divisions. Most seed companies sell cultivars that can be grown from seed. The cultivars are usually 12 to 24 inches tall.



97. The seed-grown dahlia is excellent as a bedding plant. Flowering is from June to October. Dahlia can be grown in full sun or partial shade in well-drained, moist soil.

Some of the dwarf seed-grown dahlias are listed in catalogs. There is also a large group of tuberous rooted dahlias which grow 3 to 5 feet tall and bear flowers 8 to 12 inches across. Any good herbaceous plant catalog will list these selections.

Seed-grown dahlia selections are: 'Border Jewels' — blend of colors, double and semi-double flowers; 'Early Bird' — early flowers, excellent color range; 'Redskin' — bronze foliage, color mixture; and 'Rigoletto'— early flowers, double with a mixture of colors.

98. ***Dianthus caryophyllus*** **Caryophyllaceae**
(di-an'thus kar-i-o-fil'us) Habitat: Native to southern Europe
CARNATION, CLOVE PINK,
DIVINE FLOWER

Carnation is a short-lived perennial that is grown as an annual. This 12- to 24-inch erect plant has conspicuous nodes and narrow, blue-glaucous leaves. The midsummer flowers are showy and very fragrant. They come in white, pink, red, purple, yellow or apricot-orange.

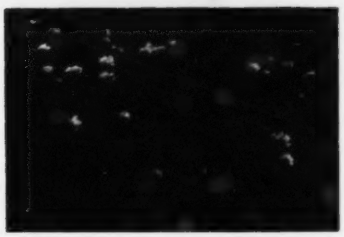
The common carnation is used as a cut flower, while the dwarf forms are suitable as bedding plants. The tall-growing forms tend to lodge. Carnations should be planted in a full sun location in fertile soil. Although there are many cultivars grown by florists, a smaller number is bred for outdoor culture. 'Juliet,' a 12-inch, double scarlet, is an example of a garden carnation.

99. ***Dianthus chinensis*** **Caryophyllaceae**
(di-an'thus chi-nen'sis) Habitat: Native to eastern Asia
CHINA PINK, ANNUAL PINK,
RAINBOW PINK

China pink is a popular bedding plant which is used for edging, bedding and rock gardens; the taller cultivars are used for cut flowers. The flowers are profuse, and the petals are toothed. Colors are red, pink, white, and bicolored.

100. China pink cultivars vary in height from 6 to 15 inches. Most are 6 to 8 inches tall. This species should be planted in full sun to partial shade in fertile soil. Flowering is best in early to midsummer. *Dianthus* may grow from self-sown seeds if the winter is not too severe. Cultivar selections include 'China Doll' — crimson-red; 'Snowfire' — white flowers with cherry-red centers; 'Queen of Hearts' (shown here) — 12-inch compact plant with scarlet-red flowers; and 'Charm' series — 6-inch plants with various flower colors.

101. *Dianthus barbatus* (sweet William), a related species, is a biennial. Plants are seeded in summer, overwintered in a cold frame, and planted in the spring for summer flowering.

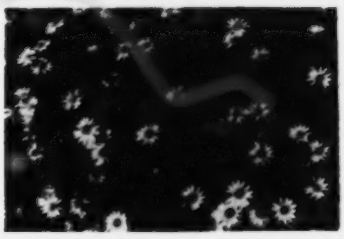


102. ***Dimorphotheca sinuata*** **Compositae**
(di-mor-fo-the'ka sin-u-ay'ta) Habitat: Native to South Africa
AFRICAN DAISY, CAPE MARIGOLD

African daisy is a relatively unknown bedding plant which is grown as a tropical perennial in South Africa. African daisy is 12 inches tall with a round habit. Flowering is full season — from frost to frost if planted after the last frost in the spring. Flower heads are 1½ to 2 inches across with yellow disk flowers and orange-yellow ray flowers.

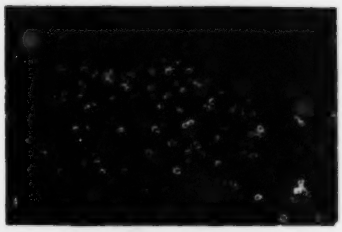
103. Other cultivar colors are white (as shown here), salmon and rose.

Dimorphotheca does well in full sun and well-drained soil. In fact, it does extremely well in hot and dry locations. African daisy can be used as a border or bedding plant. 'Glistening White' — white ray flowers with a dark center - is a single color cultivar. There is also a seed mixture available with yellow, buff, white and salmon flower colors.



104. ***Dyssodia tenuiloba*** **Compositae**
(dis-ode'ee-a ten'u-ee-lobe'a) Habitat: Native to south
DAHLBERG DAISY, GOLDEN-FLEECE central Texas and Mexico

Dahlberg daisy is a delightful small annual that can be planted in full sun and well-drained soil. It takes heat and dry soils very well, as its native habitat range indicates. The leaves are pinnately cut, resulting in a fine textured appearance. The foliage is topped by golden flowers which are small and dainty. The plant is 8 inches tall with a mounded growth form.



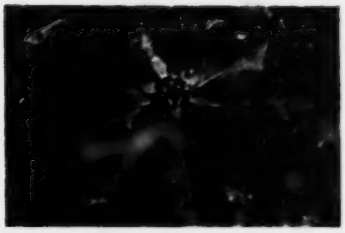
105. Dahlberg daisy is refined, neat and always in flower. It is useful for edging, as a new variety in the border, and for bright garden accents. It is a minor bedding plant that performs consistently well, but unfortunately remains unknown and seldom used.

106. ***Eschscholzia californica*** **Papaveraceae**
(eh-shol'see-a kal-i-for'nik-a) Habitat: Native to California
CALIFORNIA POPPY and Oregon

California poppy grows 12 to 15 inches tall with a round growth habit. The foliage is finely dissected and blue-gray-green in color.

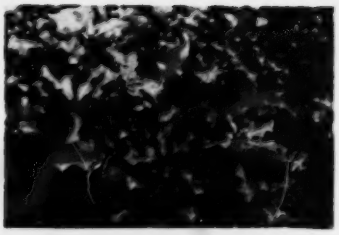
107. The native species, shown here, has an orange to pale yellow flower, while the cultivars have flowers with colors of bronze, scarlet, rose or white. Flowering is from June to frost in its native area.

Eschscholzia should be planted in well-drained soil in a full sun site. It will grow in quite dry and adverse sites. California poppy will often self-sow, particularly in mild climates where it performs as a perennial. 'Mission Bells', a widely used cultivar, has double or semi-double flowers with mixed colors.



108. ***Euphorbia cyathophora*** **Euphorbiaceae**
(u-for'bee-a si'ath-o-for'a) Habitat: Native to Mexico
MEXICAN FIRE PLANT, FIRE-ON-THE-MOUNTAIN,
PAINTED LEAF, FIDDLER'S SPURGE

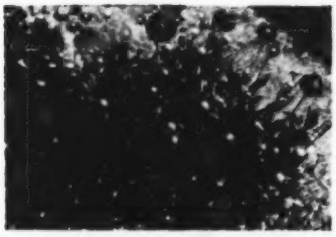
This native of Mexico has ovate to linear, or sometimes fiddle-shaped, leaves which are very similar to the florist poinsettia. The upper leaves and floral bracts become red or red at the base. *Euphorbia* is planted in the flower border for the colored bracts. The true flowers are inconspicuous.



109. This species is easy to grow in any well-drained soil and full sun site. Mexican fire plant is seldom seen in the flower garden. It is often listed as *Euphorbia heterophylla*.

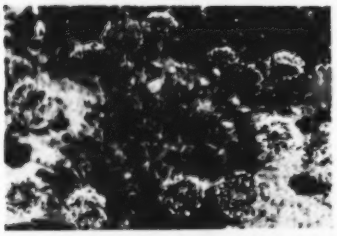
110. ***Gaillardia pulchella*** **Compositae**
(gay-lar'dee-a pul-kel'a) Habitat: Native to western
ANNUAL GAILLARDIA, BLANKET FLOWER, United States
INDIAN BLANKET

Gaillardia is a brightly colored annual that should be used more in the garden. The flowers of this western United States native are 2 inches across and can be colored red, yellow, orange, or butterscotch.



111. Plant height is 12 to 24 inches. The flowering season is from June to September, all through the hottest, driest part of the season.

Gaillardia is used for cut flowers, bedding plants, or planters. It grows best in full sun and will withstand hot winds and drought better than most annuals.



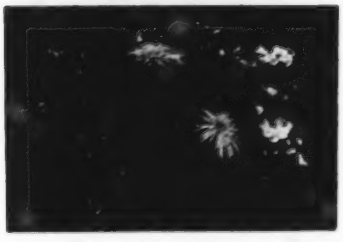
112. Cultivar selections include: 'Butterscotch Bronze' — 12 inches, yellow with red centers; 'Lemon Delight' — yellow; 'Lollipops' (shown here) — 18 inches, mixed colors; 'Raspberry Red' — 10 inches, scarlet; and 'Tetra Fiesta' — 30 inches, strawberry-colored.

113. ***Gazania rigens*** **Compositae**
(ga-zay'nee-a rye'jenz) Habitat: Native to South Africa
GAZANIA, TREASURE FLOWER

Gazania is a 6- to 12-inch-tall plant. The leaves are mostly basal; rarely are there stem leaves. The foliage is bright green above and white-tomentose below — an interesting contrast. Borne on erect flower stems, the flower heads are large (2 to 3 inches) and showy. The ray flowers are orange, yellow, pink, white or violet, usually with a dark ring about the base of the ray flowers. Flowering is from midsummer until frost.

114. Gazania does well in full sun and well-drained soil. It is an excellent plant, particularly for dry and hot sites. Gazania can be used for bedding and border and as an edging plant. The blossoms close at night and on cloudy days; consequently, they have little value as cut flowers.

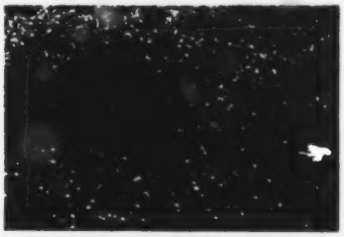
115. 'Sunshine,' 'Mini-star' (shown here), and 'Sundance' are a few of the hybrid series available.



116. ***Gerbera jamesonii*** **Compositae**
(jer-beer'a jame-so'nee-i) Habitat: Native to South Africa and Asia
TRANSVAAL DAISY, GERBERA, BARBERTON DAISY, VELDT DAISY

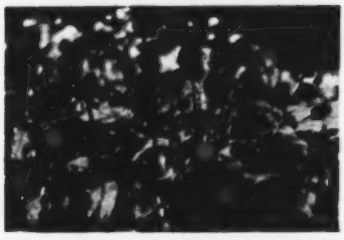
Gerbera is a perennial that is grown as an annual. It is 12 to 18 inches tall with prostrate leaves and erect flower stems. The flower heads are 4 inches across, with showy orange-flame colored rays. Many color forms are known in the cultivated strains ranging through shades of yellow, salmon, pink, or red with petals arranged in single or double rows. Flowering occurs from June to October.

117. Gerbera is suitable as a bedding plant or as a cut flower. It is also quite good as a pot plant for florist sales. Gerbera grows well in full sun to partial shade in well-drained soil. Good cultivar selections are 'Happipot' (shown here) — mixture of bright colors; 'Perfection Strain' — double flowers; and 'Sunburst Duplex' — double flowers, variety of colors.



118. ***Gomphrena globosa*** **Amaranthaceae**
(gom-fre'na glo-bo'sa) Habitat: Native to the tropics
GOMPHRENA, GLOBE AMARANTH

Gomphrena is one of the better annuals for everlasting flowers (dried). There are dwarf cultivars (9 inches) which are useful for bedding or edging purposes. The tall cultivars (24 inches) are used for cut and dried flowers. The bloom period is from July to October in the Midwest.

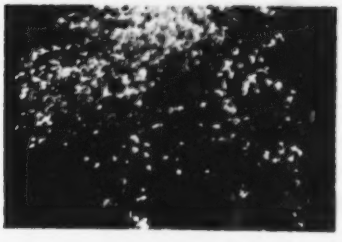


119. The individual flower head resembles that of the clover flower. Colors are purple, pink, white, orange or yellow. For drying, the flowers are picked before they are fully open.

120. Gomphrena is grown in the sun in well-drained soil. This old-fashioned garden flower is easy to grow, tough and drought resistant. It is fairly pest free except for damping-off which can occur during the seedling stage. 'Buddy' (shown here) is dwarf red, while var. *rubra* is 2 feet tall and red.

121. ***Gypsophila elegans*** **Caryophyllaceae**
(jip-sof'i-la el'e-ganz) Habitat: Native to Europe and northern Asia
ANNUAL BABY'S-BREATH, CHALK PLANT

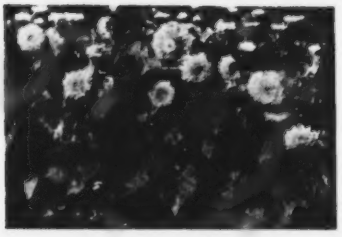
Annual baby's-breath is most often used in the cutting garden rather than as a bedding plant. The bloom is limited, 4 to 6 weeks, so successive plantings are done about every 10 days to provide a continuous bloom.



122. Baby's-breath is a florist favorite as a cut flower because the plants have a misty, airy appearance when in flower. The plants grow 18 to 24 inches tall. A well-drained soil in a full sun site is best. A high pH, 7.0 - 7.5, is needed for optimum growth. 'Covent Garden' grows 24 inches tall with white flowers. 'White Giant' is listed as having flowers 25% larger than 'Covent Garden's.'

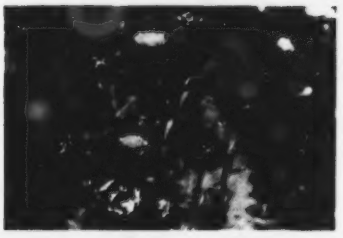
123. ***Helianthus annuus*** **Compositae**
(he-lee-an'thus an'u-us) Habitat: Native to North America
COMMON SUNFLOWER

The native species of sunflower is a coarse-textured, tall plant that reaches heights of 6 to 10 feet. In many countries it is grown for its seed oil. Sunflower tolerates almost any soil type. It should be planted in full sun and well drained soil. Tolerance to heat and drought is an asset. Flowering is from July to August.



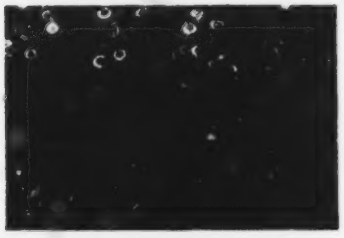
124. For ornamental use, the cultivars are most important because they are smaller in size, 2 to 4 feet. 'Teddy Bear' (shown here) and 'Sungold,' both yellow flowered, are two of these cultivars, 24 inches or less.

125. 'Italian White,' 4 feet tall, has white single flowers.



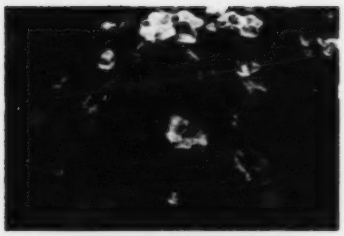
126. ***Helichrysum bracteatum*** **Compositae**
(he-lic-cry'sum brak-tee-ay'tum) Habitat: Native to Australia
STRAWFLOWER

Helichrysum is one of the best everlastings to dry for bouquets. It is also a showy bedding plant. The flower heads are about 2 inches across. The papery-feeling "petals" are actually involucral bracts - rigid and glossy. Colors are yellow, orange, red, salmon, rose, white, or purple. Flowers are present from July to October.



127. Strawflower requires well-drained soil and full sun. Stem rot will occur on plants in wet soil. 'Gold Bikini,' 12 inches, golden flowers; and 'Hot Bikini,' 12 inches, bright red flowers, are small cultivars suitable for bedding purposes.

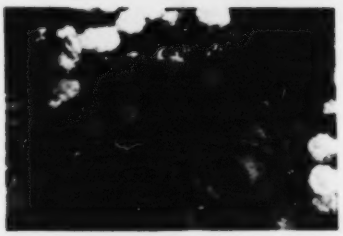
128. *Helichrysum petiolatum* is a related species that is utilized for the foliage effect.



129. The leaves are ovate to cordate to nearly orbicular and are covered with soft, white pubescent hairs.

130. ***Heliotropium arborescens*** **Boraginaceae**
(he'lee-o-tro'pee-um ar-bo-res'enz) Habitat: Native to Peru
HELIOTROPE

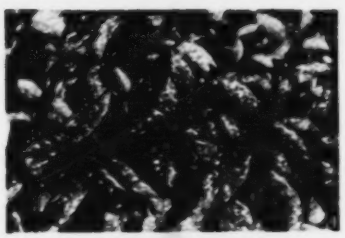
Heliotrope has very fragrant flowers, so much so that the plant is grown for the perfume industry as well as for bedding purposes. This species is easy to grow. It does best in full sun or light shade.



131. Heliotrope grows 18 inches tall with flowers of violet or purple, varying to white. 'Marine' is a compact plant with large deep purple flower heads.

132. ***Hypoestes phyllostachya*** **Acanthaceae**
(hi-po-es'teez fil-o-stay'kee-a) Habitat: Native to Madagascar
POLKA-DOT PLANT, PINK POLKA-DOT PLANT, MEASLES PLANT, FRECKLE-FACE

Polka-dot plant grows 1 to 2 feet tall and is a beautiful foliage plant. The leaves are green, speckled with red or pink dots. The flowers are not decorative. *Hypoestes* should be planted in full sun in well-drained soil.



133. 'Pink Flash,' shown here, is an available cultivar. In the trade this species is sometimes listed as *Hypoestes sanguinolenta*.

134. ***Impatiens balsamina*** **Balsaminaceae**
(im-pay'she-enz ball-sam'in-a) Habitat: Native to India and China
GARDEN BALSAM, TOUCH-ME-NOT, ROSE BALSAM

Garden balsam has alternate, lanceolate leaves which are serrate on the margin. The growth habit is usually erect with cultivars ranging in height from 12 to 24 inches. The rose- or camellia-shaped flowers are borne in the upper axils of the plant. Flowering is from June to frost. There are many different flower colors.

135. Garden balsam grows well in sun or partial shade. Balsam does best in rich soil containing leaf mold or other types of compost. The small cultivars can be used for bedding and edging purposes, the larger ones for borders.

136. ***Impatiens wallerana*** **Balsaminaceae**
(im-pay'she-enz wall-er-ay'na) Habitat: Native to eastern Africa
SULTANA, PATIENT LUCY,
BUSY LIZZIE, PATIENT PLANT

Impatiens wallerana is one of the more popular annuals for shaded areas. It can also be grown in full sun if good moisture is applied or the area is quite cool. Shade is a *must* for southern gardens. Sultana grows 8 to 18 inches tall and makes a compact, mounded shape.

137. Sultana flowers, 1 to 2 inches in diameter, are solitary or borne in axillary or terminal racemes. The lower sepal of the flower has a slightly curved spur. The single or double flowers come in numerous colors, some even bicolored. Flowering is very profuse from June to frost.

138. Cultivar selections by height include some of the following: 8-10 inches — 'Super Elfin' (shown here); 10-12 inches — 'Fantasia,' 'Sherbet Mixture,' 'Futura,' and 'Showstopper'; 12-14 inches — 'Blitz,' 'Grande,' and 'Duet Mixture.'

139. Height in impatiens is variable. Large amounts of fertilizer and water can cause excessive growth. To improve compact growth, one should reduce fertilization and allow impatiens to dry out some between waterings.

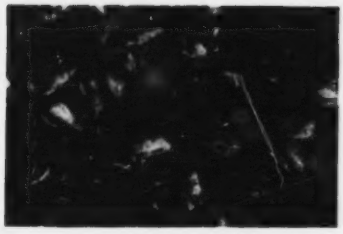
140. ***Ipomoea tricolor*** **Convolvulaceae**
(ip-po-me'a tri'kul-er) Habitat: Native to the tropics
COMMON MORNING-GLORY

The leaves of morning-glory are cordate at the base and are borne on glabrous, twining vines. The flowers are trumpet-shaped and come in many colors — purple, blue, pink, red, yellow, or white with a lighter colored tube. Individual flowers are open in the morning and often close in the afternoon. On cloudy days the flowers may remain open during the afternoon.

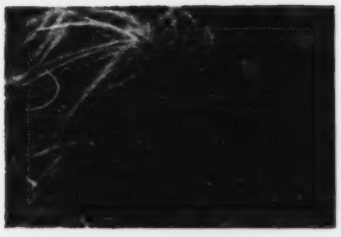
141. Morning-glory does best in full sun in well-drained soil. High fertility and moisture will produce abundant foliage but few flowers. This fast-growing vine can grow to 10 feet in two months. It is useful for covering a screen or trellis. 'Heavenly Blue' — bright blue, and 'Early Call Rose' — rose red with white throats, are two selections available.

142. ***Iresine herbstii*** **Amaranthaceae**
(i-ree-sie'nee herb'stee-i) Habitat: Native to South America
BLOODLEAF, BEEF PLANT,
BEEFSTEAK PLANT, CHICKEN-GIZZARD

Bloodleaf is a tropical plant with brightly colored leaves. Its major use in northern areas is in summer flower beds. In tropical areas it performs as a perennial. *Iresine* grows 12 to 20 inches tall. The flowers are not important as an ornamental feature. Bloodleaf should be grown in full sun. Cultivars are 'Jepson,' with reddish leaves (shown here) . . .



143. . . . and 'Gibsoni,' with green and yellow leaves.

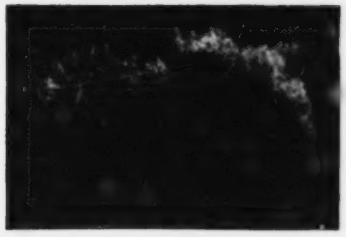


144. ***Kochia scoparia*** forma ***trichophylla*** **Chenopodiaceae**
(ko'kee-a sko-pare'ee-a trik-o-fil'-a) Habitat: Native to Europe, Asia, naturalized in western United States
SUMMER CYPRESS, BURNING BUSH,
FIREBUSH, BELVEDERE

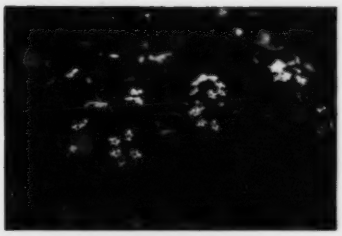
Summer cypress has a fine-textured branching habit and grows 2 to 3 feet tall.

145. The light green foliage is the ornamental feature of the plant. In cool fall weather it turns red; hence the common names "burning bush" and "firebush." This species can be used as a background for a border or as a summer hedge.

Kochia is grown in full sun in well-drained soil. It is rated as one of the toughest annuals, even in highly polluted areas. The plant is extremely invasive, especially if it has a chance to self seed. Because of this, it should carry a "warning" label.

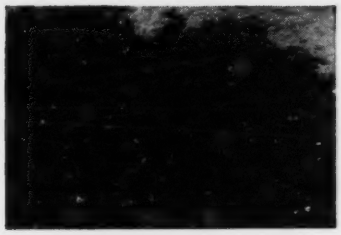


146. 'Acapulco Silver' is a selection with white variegated leaves.



147. ***Lantana camara*** **Verbenaceae**
(lan-tan'a ka-mar'a) Habitat: Native to South America
LANTANA, YELLOW SAGE

Lantana is an evergreen flowering plant that has woody stems and rough, hairy, ovate leaves. The clusters of small flowers are bicolored and come in pink, yellow, white, orange, or red.

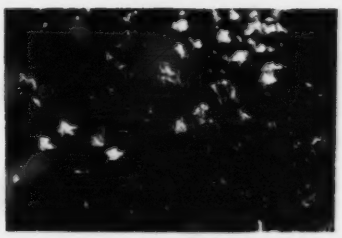


148. Lantana are used as greenhouse plants and as bedding plants where winters are cold. The bedding plants are usually 12 to 15 inches tall. In Zones 9 and 10 lantana is used for permanent outdoor plantings. It should be planted in full sun.

149. Lantana can also be trained as a standard, creating a "tree form." This single-stemmed plant grows 2 to 3 feet tall. The standard lantana has to be stored inside during the winter in northern areas.

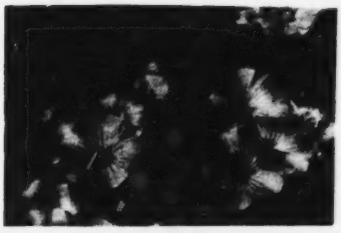
150. ***Lathyrus odoratus*** **Leguminosae**
(lath'i-rus o-do-ray'tus) Habitat: Native to Italy
SWEET PEA

Sweet pea is a climbing annual with fragrant flowers. It can be used on a trellis and is excellent as a cut flower.



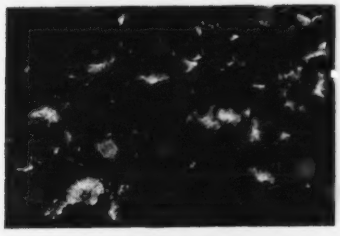
151. The pea-like flowers are borne above the foliage and they come in a wide color range.

Annual sweet pea is somewhat difficult to grow in areas where the summers are extremely hot. The soil should be high in organic matter and should be kept moist. Spent blossoms should be removed to extend the flowering season. 'Royal Family Mixture' has a good long-lasting flower that is good for cutting. A number of named cultivars are also available in the 'Spencer' strain in a variety of flower sizes and times of bloom.

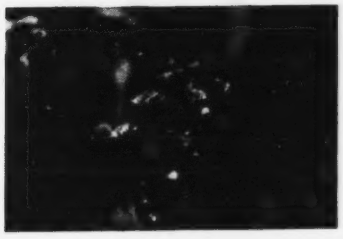


152. ***Lavatera trimestris*** **Malvaceae**
(lav-a-tee'ra tri-mes'tris) Habitat: Native to southern Europe
ROSE MALLOW

Rose mallow forms an erect plant 2 to 3 feet tall with solitary 2- to 4-inch-wide flowers which are pink or red in color. The flowers resemble the flowers of hollyhock.



153. Rose mallow can be used in border plantings and also for cut flowers, though the flowers are short-lived. *Lavatera* freely produces flowers in July and August. To get maximum bloom, one should remove faded flowers and maintain a moist soil condition. Flowering is not good in areas where summers are excessively hot.



154. ***Limonium sinuatum*** **Plumbaginaceae**
(lim-o'nee-um sin-u-ay'tum) Habitat: Native to Mediterranean region
NOTCHLEAF STATICE,
NOTCHLEAF SEA LAVENDER

The flowers of notchleaf statice are borne atop winged branches. Flowers can be yellow, blue, lavender, rose or white. They bloom from July to October. The flowers are paper-textured, and the bright-colored calyx remains on the stem. This creates excellent cut or dried flower branches.

155. The leaves are basal, lyrate-pinnatifid, growing up to 8 inches long. The notchleaf statice plant grows 18 to 24 inches tall. It can be used for bedding or massing. Statice is grown in full sun and well-drained soil. It is also salt tolerant and can be grown in ocean-side conditions.

156. ***Linaria maroccana*** **Scrophulariaceae**
(lin-nare'ee-a mare-ok-kay'na) Habitat: Native to Morocco
ANNUAL LINARIA, TOADFLAX

Linaria maroccana is a dainty annual 8 to 15 inches tall. It is useful for rock gardens, edging, and massing to the front of the border. It has sometimes been called "baby snapdragon" because of the flower shape which somewhat resembles the flower of snapdragon.

157. Flower colors are purple, white, blue, pink, red or yellow; the petals are also blotched with another color on the lip.

Linaria performs well in sun or light shade in well-drained soil. This species is a cool weather plant that will not be in bloom after July when planted in areas of hot summers. 'Fairy Bouquet' is 10 inches tall with mixed colors, and 'Northern Lights' is 12 to 15 inches tall, also with mixed colors.

158. ***Lobelia erinus*** **Lobeliaceae**
(lo-be'lee-a er-rye'nus) Habitat: Native to South
LOBELIA, EDGING LOBELIA Africa

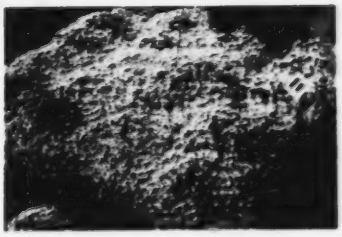
Lobelia is a small, dainty annual that blooms profusely. The flowers are borne in loose racemes. Individual flowers are two-lipped with an upper lip of two distinct lobes and a lower lip with three lobes.

159. Edging lobelia grows 6 inches tall with a round and spreading growth habit. It is planted for mass effect toward the front of the border and in rock gardens. The trailing types can be used in hanging baskets.

160. Lobelia should be planted in the shade in areas of hot summers. It can be planted in full sun only in areas of cool summers and moist soil. 'Blue Skies' — sky blue flowers, and 'Crystal Palace' —blue flowers, are compact types. Trailing lobelias include 'Sapphire' — deep blue with a white eye; 'Blue Cascade' — blue; and 'Red Cascade' — purple-red with a white eye.

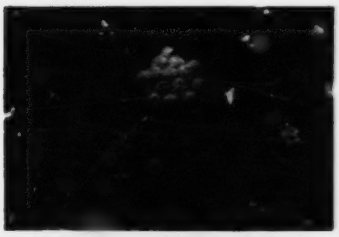
161. ***Lobularia maritima*** **Cruciferae**
(lob-u-lare'ee-a ma-rit'im-a) Habitat: Native to Mediterranean
SWEET ALYSSUM area

Sweet alyssum grows 4 to 8 inches tall with an equal spread. Each flower has four petals, as do all members of the mustard family (Cruciferae).



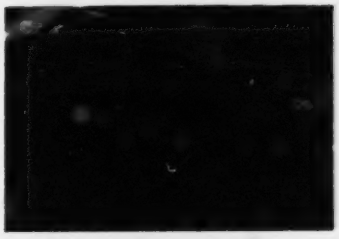
162. The flowers are white, pink, red or lavender. They are very profuse and are fragrant.

163. Sweet alyssum can be used for edging, in rock gardens, and as a summer ground cover. It can also be used in bulb beds as a carpet plant to hide the dying leaves of bulb plants like daffodils. It is grown in full sun but will tolerate light shade. Sweet alyssum ranks high as a bedding plant. With reasonable care it is easily grown; however, a midsummer slump is not uncommon in extreme heat. Flowering resumes in cooler weather. Cultivars include 'New Carpet of Snow' — white; 'Rosie O'Day' — lavender rose; 'Royal Carpet' — violet-purple; and 'Wonderland' — cherry red.

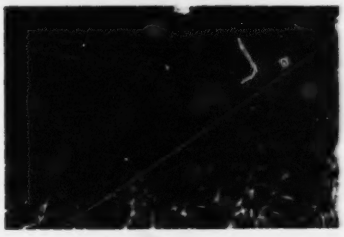


164. ***Lonas annua*** **Compositae**
(lo'nus an'u-a) Habitat: Native to Italy and northwestern Africa
YELLOW AGERATUM, GOLDEN AGERATUM

Yellow ageratum has clustered flower heads similar to the true *Ageratum*.



165. The yellow flowers are borne atop 12-inch-tall, rounded plants. Flowering is from June to frost. Full sun in well-drained soil is the preferred planting site. *Lonas* is a minor bedding plant with little horticultural value. It is often sold as a novelty plant to complement *Ageratum*, although there is no relationship except for the common name. There are no serious pest problems.



166. ***Matthiola incana*** **Cruciferae**
(ma-thee'o-la in-kay'na) Habitat: Native to Mediterranean region
COMMON STOCK, TEN-WEEKS STOCK, GILLYFLOWER

The foliage of stock is gray with branched hairs creating a matted pubescence. The fragrant flowers are about 1 inch wide and are borne in terminal racemes.

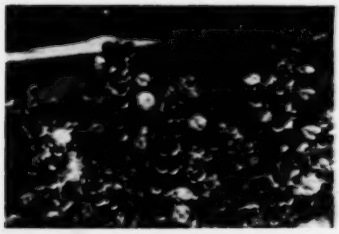
167. Flower colors are white, blue, yellow, pink, and purple. Flowering is early to midsummer; hot weather slows the flowering of common stock.

Common stock varies in height from 12 to 30 inches depending upon the cultivar selected. It should be planted in full sun or light shade in moist soil. Stock should not be overwatered or crowded because root or stem rot could develop. Cultivars include 'Dwarf Ten-Week' — 12 inches, large double flowers, mixed colors; and 'Trysomic Dwarf Seven-Week' — 12 to 15 inches, blooms over a long period, even in hot weather.

168. ***Mirabilis jalapa*** **Nyctaginaceae**
(mir-ab'il-is jal-ay'pa) Habitat: Native to the tropics
FOUR-O'CLOCK, MARVEL-OF-PERU, BEAUTY-OF-THE-NIGHT

Four-o'clock is a bushy, shrub-like, tropical perennial that is grown as an annual in northern climates. The flowers are trumpet-shaped with a corolla tube 1 to 2 inches long. Flowers open in the late afternoon and are white, red, yellow, pink or striped. Flowering is from midsummer to frost.

169. *Mirabilis* can be used in a border or as a temporary shrub. It can be grown in sun or partial shade in any soil. 'Jingles' has a striped flower in mixed colors; 'Pygmy' is a compact cultivar with mixed colors.



170. ***Molucella laevis*** **Labiatae**

(mo-lu-sel'a lee'vis) Habitat: Native to western Asia

BELLS-OF-IRELAND, IRISH BELLS, SHELLFLOWER, MOLUCCA PALM

Bells-of-Ireland is grown for its shell-like, persistent calyx and is used either fresh (green) or dried (tan) in floral arrangements. The green calyx is inflated, five-angled, with five small prickles.

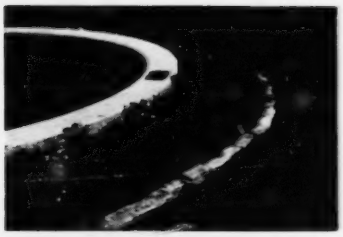
171. *Molucella* is a 2- to 3-foot erect plant. It performs best in full sun and well-drained, moist soil. Bells-of-Ireland is sometimes difficult to transplant. Some gardeners sow the seed in the area where the plant is to grow.

172. ***Nicotiana alata*** **Solanaceae**

(nik-o-shee-ay'na a-lay'ta) Habitat: Native to Brazil

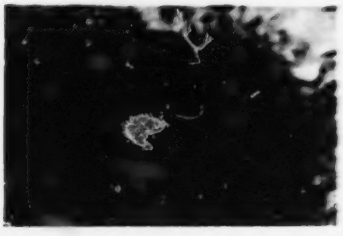
FLOWERING TOBACCO, JASMINE TOBACCO, ORNAMENTAL TOBACCO

The leaves of flowering tobacco are viscid-pubescent and strongly scented. The inflorescence is a raceme of flowers with 2- to 4-inch-long corolla tubes which expand into wide trumpets. Colors are white, lavender, crimson, maroon, green, pink, lime and yellow. Flowering is from mid-June to October. Flowering tobacco starts flowering later than other annuals such as petunias. Consequently, it is not as popular as other bedding plants because it is not in flower in the spring sales season.



173. Flowering tobacco does best in full sun and well-drained soil. It is usually utilized in the border or as a bedding plant.

174. The 'Domino' series is a new cultivar with compact and basal branching. The 'Nicki' series (shown here) is another group available in single colors or as a mixture.



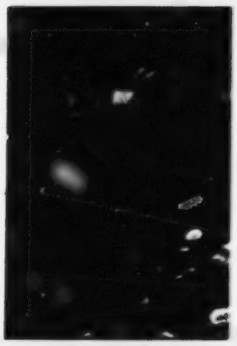
175. ***Nierembergia hippomanica*** **Solanaceae**

(ne-rem-ber'jee-a hip-o-man'i-ka) Habitat: Native to Argentina

NIEREMBERGIA, CUP FLOWER

Nierembergia is a compact, fine-textured plant that is literally covered with non-fading, lavender-blue, star-shaped blooms all summer. It can be grown in sun or light shade. If planted in areas that have hot, dry summers, light shade is preferred.

176. Nierembergia is excellent for edging, for rock gardens, or for mass effects in the border. 'Purple Robe' — deep blue, and 'Regal Robe' (shown here) — deep purple, are two common cultivars.



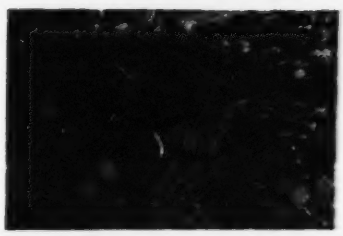
177. ***Nigella damascena*** **Ranunculaceae**
(ni-jel'a dam-a-see'na) Habitat: Native to southern Europe and northern Africa
LOVE-IN-A-MIST

Nigella is grown for its finely cut foliage and its colorful flowers.

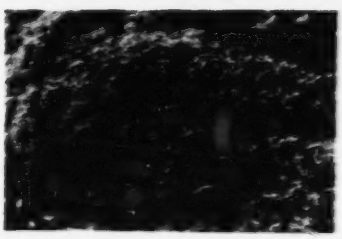
178. The flowers of the species are white to light blue with a large, finely divided involucre. 'Persian Jewels' is a mixture with white, pink, red or purple. *Nigella* flowers from July to September. Best growth occurs in well-drained soil in full sun.

179. ***Ocimum basilicum*** **Labiatae**
(o'see-mum ba-sil'e-kum) Habitat: Native to the tropics
SWEET BASIL, COMMON BASIL

Sweet basil has opposite leaves, square stems, and a pleasing fragrance to the foliage. It is grown for ornamental effect and for culinary use. The leaves can be hung to dry and used as flavoring.



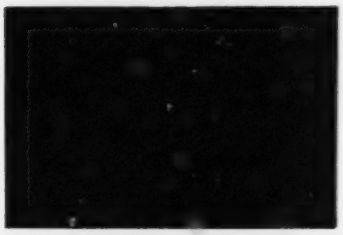
180. As a culinary herb, the green leaved cultivar 'Green Bouquet' (right) is preferred, but for colored foliage the purple-leaved cultivar 'Dark Opal' (left) is recommended.



181. Basil grows 12 to 24 inches tall. It performs best in well-drained soil and full sun. "Ocimum" is from the Greek *okimom*, an aromatic herb.

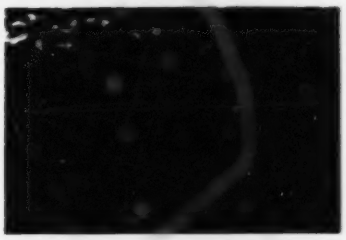
182. ***Pelargonium* x *hortorum*** **Geraniaceae**
(pel-ar-go'nee-um hor-tor'um) Hybrid origin; original habitat: Native to South Africa
GERANIUM, BEDDING GERANIUM, ZONAL GERANIUM

Geranium has round to reniform leaves with scalloped margins. The leaves may be zoned or variegated and there is a heavy odor to the bruised foliage.

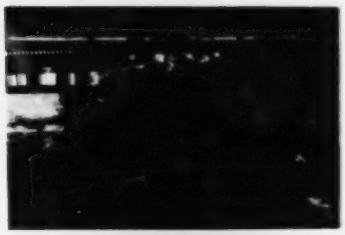


183. The flowers are red, pink, salmon, or white in color. Plant height is 12 to 20 inches.

184. Geraniums do well in moist, well-drained soil with a cool root zone. Full sun is the best exposure. Geranium has use in the border, as a bedding plant, and in containers or hanging baskets. This hybrid can be propagated by cuttings or seed. The following selections are seed-grown: 'Carefree' (shown here) — vigorous, self-branding type, multiple colors; 'Ringo' — early flowering, leaf zoning; 'Orbit' — compact habit, leaf zoning; and 'Sprinter' (#182, 183) — early flowering, wide color range. 'Razzmatazz' and 'Heidi' are two bicolored flower types.



185. *Pelargonium peltatum* (ivy-leaved geranium) has a vine-like habit and is popular for use in hanging baskets and window boxes.



186. Ivy-leaved geraniums bloom best where summers are cool. They are popular plants in Europe where they are used in window boxes.

187. ***Pennisetum setaceum*** **Gramineae**
(pen-ni-see'tum se-tay'se-um) Habitat: Native to Ethiopia
FOUNTAIN GRASS

Fountain grass is a perennial in Zones 8-10, but is grown as an annual in other zones. Fountain grass grows 2 to 4 feet tall with a graceful, arching habit.

188. The nodding inflorescence is 8 to 10 inches long with a pink or purplish color. The bloom is present from July to October.

189. *Pennisetum* can be used as a border plant, as a background plant, or for dried flowers. The plumes can be cut when fully expanded, tied in bundles and hung in a cool place to dry. Fountain grass prefers full sun and moist, well-drained soil. The variety *cupreum* (shown here) has purplish foliage and reddish inflorescences. This species used to be named *Pennisetum ruppelii*.

190. ***Pentas lanceolata*** **Rubiaceae**
(pen'tas lan-see-o-lay'ta) Habitat: Native to tropical Africa
STAR CLUSTER

Star cluster is a tropical shrub that can be grown indoors during the winter or used as a summer bedding plant. It grows about 18 inches tall and has large ovate to lanceolate, pointed leaves. The flowers are white, pink or violet and are borne at the tips of the branches. Flowering is from June to October.

191. *Pentas* can be planted in sun or light shade. The soil should be fertile and well-drained. 'Pink Velvet,' with pink, star-shaped flowers, is the cultivar shown here.

192. ***Petunia x hybrida*** **Solanaceae**
(pe-tu'nee-a hi'brid-a) Habitat: Native to South America
PETUNIA

This colorful member of the Solanaceae family is in bloom from May to October. The flowers are 2 to 4 inches long and have funnel-shaped corolla tubes.

Petunias are classified as multiflora or grandiflora. The multifloras (shown here) have many flowers 2 to 3 inches across.

193. Grandifloras, like these, have fewer but larger flowers that are 4 inches or more across. Double and single forms exist in each classification. The very sweet scent of petunia, like that of clover or gardenia, is one of its best features.

194. Petunia does best in well-drained soil and in full sun. Plant height is 8 to 15 inches. No other bedding plant has the universal dependability, garden value, and long season of bloom of the petunia. Add to this the diversity of colors, flower forms and growth habits, and one has the answer to why petunia continues to stay on top of the popularity list.

195. ***Phlox drummondi*** **Polemoniaceae**
(floks drum'mun-dee) Habitat: Native to Texas
ANNUAL PHLOX, DRUMMOND PHLOX, TEXAS PRIDE

The flowers of annual phlox are showy. The name "phlox" means *flame*, and refers to the brilliant coloring of the flowers. Individual flowers have five petals, either round-tipped . . .

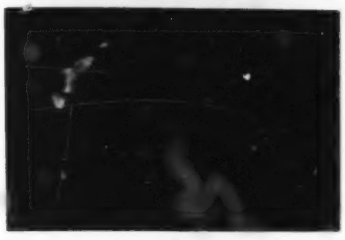
196. . . . or star-shaped. Flower colors are white, pink, purple, yellow, red or bicolored.

Annual phlox grows 8 to 12 inches tall and is used for edging or bedding or in rock gardens. Best growth and flowering is in rich, well-drained soil in full sun. Annual phlox is a very colorful and desirable bedding plant when at its best. However, it reaches peak bloom in early summer and declines; then it presents a fairly good color display again in the fall. The 'Twinkles' mix has star-shaped flowers, and the 'Dwarf Early' mix has round-tipped petals.

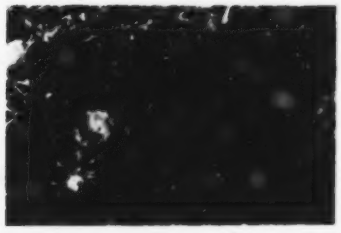
197. ***Polygonum capitatum*** **Polygonaceae**
(po-lig'o-num kap-it-ay'tum) Habitat: Native to Asia and Australia
PINKHEAD KNOTWEED, POLYGONUM

Polygonum has alternate leaves which are 1 to 1½ inches long, variegated, and bronze-red in color. The growth habit is low, 2 to 3 inches tall.

198. The pink flowers grow in dense heads ½ to ¾ inch in diameter. 'Magic Carpet,' seen here, is one of the best annual ground covers, but it is also useful in hanging baskets, planters, and rock gardens.



199. It is particularly suitable for wet areas in sun or partial shade. "Polygonum" is from the Greek — *poly* (many), and *gony* (a knee joint), so named because of its swollen-jointed stems.



200. ***Portulaca grandiflora*** **Portulacaceae**
(por-tu-lak'a gran-dif-flo'ra) Habitat: Native to Brazil
ROSE MOSS, MOSS ROSE,
PORTULACA, SUN PLANT

Rose moss is a 6-inch-tall, spreading plant with prostrate or ascending leaves and with scattered hairs at the joint and among the leaves. The flowers, 1 inch across, come in bright shades of rose, red, yellow, white, orange and striped. Flowers can be single or double. The flowers of rose moss normally close in mid-afternoon; however, a new cultivar, 'Afternoon Delight,' retains open flowers into the evening. Flowering is from June to October.

201. Rose moss grows very well in sunny, dry locations. It performs well where other flowers would not grow. *Portulaca grandiflora* is useful as a summer ground cover or edging or in a rock garden.

202. ***Ricinus communis*** **Euphorbiaceae**
(ris'in-us kom-mu'nis) Habitat: Native to tropical Africa
CASTOR BEAN, CASTOR-OIL-PLANT,
PALMA CHRISTI, WONDER TREE

The leaves of *Ricinus* are palmately lobed with 5 to 11 lobes and may be from 12 to 24 inches across. Foliage may be green, red, bluish-gray, maroon or variegated. The flowers, which have no petals, are borne in erect panicles 1 to 2 feet tall. Individual fruits are ½ to 1 inch long and may be covered with reddish-brown soft spines.

203. In cultivation, castor bean is 5 to 10 feet tall. It is a large-scale plant that can be used as a specimen or "annual shrub" for quick screening or temporary landscaping. Sun and fertile, well-watered soil are cultural requirements. The seeds are poisonous. Do not plant castor beans where childen may play.

204. ***Rudbeckia hirta*** var. ***pulcherrima*** **Compositae**
(rud-bek'ee-a her'ta pul-ker'rim-a) Habitat: Native to the
BLACK-EYED SUSAN, YELLOW OX-EYE DAISY, United States
ENGLISH BULL'S-EYE, GLORIOSA DAISY

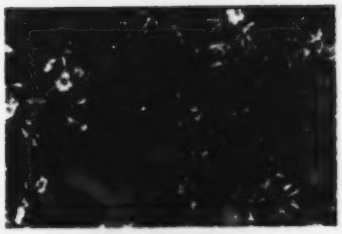
Black-eyed Susan is a perennial which blooms the first year from seed. It provides bold splashes of color with its golden-yellow ray flowers and brown to black disk flowers.

205. The cultivar 'Irish Eyes' has golden ray flowers and green disk flowers. Flowering starts in late June and continues into the fall.

206. Black-eyed Susan grows 2 to 3 feet tall and has an erect or round growth habit. This species should be planted in full sun and well-drained soil. Hot, dry summers do not bother *Rudbeckia*. Powdery mildew can sometimes be a problem.

207. ***Salpiglossis sinuata*** **Solanaceae**
(sal-pi-glos'is sin-u-ay'ta) Habitat: Native to China
PAINTED TONGUE

Painted tongue is a brightly colored annual that is used in the border or as a cut flower. Plants grow 15 to 24 inches tall. The flowers are funnel-shaped with a wide throat and are often striped or veined. Flowers come in yellow, purple, scarlet, or blue. They are in bloom from July to September.



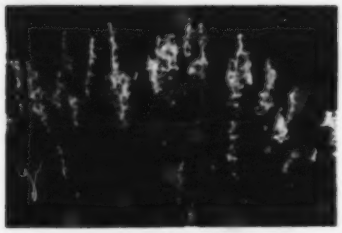
208. Painted tongue is planted in full sun and well-drained soil. Flowering will be reduced in hot weather.

209. ***Salvia farinacea*** **Labiatae**
(sal'vee-a far-in-ay'see-a) Habitat: Native to Texas
MEALYCUP SAGE

Mealycup sage is another perennial that is often sold as an annual. It is a 2- to 3-foot erect plant with blue flowers borne in an interrupted spike. The blooming period is from July to frost.

210. For sheer dependability year in and year out, mealycup sage is unsurpassed. It is a strong grower in extreme heat. It is attractive and excellent for bedding purposes, and also is good for cut flowers.

211. Three popular cultivars are: 'Blue Bedder,' 24 inches tall with blue flowers; 'Catima' (shown here), 24 inches tall with deep blue flowers; . . .



212. . . . and 'White Porcelain' (shown here), with white flowers. *Salvia* is another member of the mint family (Labiatae) with square stems.

213. ***Salvia splendens*** **Labiatae**
(sal'vee-a splen'denz) Habitat: Native to Brazil
SCARLET SAGE, RED SALVIA

This member of the mint family (Labiatae) is a popular bedding plant. Plant height ranges from 10 to 30 inches, depending on cultivar selection.

214. 'Red Hot Sally' (shown here) at 10 inches and 'Bonfire' at 30 inches are examples of the height extremes. Flower color is usually red but there are also white and violet colors. Flowering is from June to October.

215. Red salvia grows best in well-drained soil and in full sun. It is useful for the border, as a bedding plant, or as a cut flower. The brilliant red cultivars can overpower softer colors. A mass of red against evergreen foliage is an effective use. The red color is also effective with white petunias.

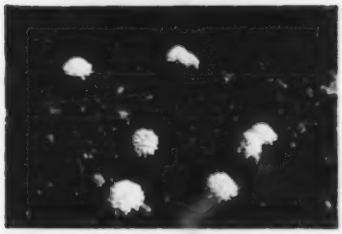
216. ***Sanvitalia procumbens*** **Compositae**
(san-vi-tay'lee-a pro-kum'benz) Habitat: Native to Mexico
CREEPING ZINNIA, TRAILING ZINNIA

Sanvitalia is a reliable annual for dry and hot areas. It is useful as a ground cover, for massing in the border front, or for filling spaces in the rock garden. "Creeping zinnia" is an appropriate common name since the 6-inch-tall branches tend to trail along the soil surface.

217. The flowers are yellow with dark purple centers and resemble small zinnias. There are also no insect and disease problems.

218. ***Scabiosa atropurpurea*** **Dipsacaceae**
(skay-bee-o'sa at'ro-pur-pur'ee-a) Habitat: Native to southern Europe
PINCUSHION FLOWER, SWEET SCABIOUS, MOURNING-BRIDE

Pincushion flower has a group of rosette leaves with stems from 1 to 3 feet, depending on the cultivar selected. The flowers are lavender, pink, purple, maroon, red, yellow, or white. Flowering is from July to frost.

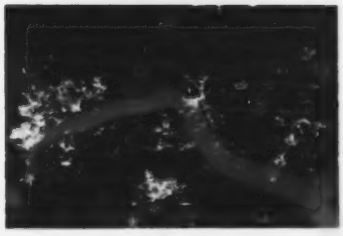


219. The stamens protrude from the flower head, like pins in a cushion, hence one of the common names — "pincushion flower."

Scabiosa should be placed in a full sun area in well-drained soil. In anyone's poll, pincushion flower would be very low in popularity. Nonetheless, it is a reliable garden annual. The uniform, well branched dwarf strain, 'Dwarf Double Mixed,' is preferred for bedding, while the taller varieties are grown for cutting.

220. ***Senecio cineraria*** **Compositae**
(se-nee'shee-o sin-er-rare'ee-a) Habitat: Native to Mediterranean region
DUSTY MILLER

Dusty miller has white-woolly leaves which are pinnately dissected into fine segments. The silver-white film on the foliage is quite ornamental.



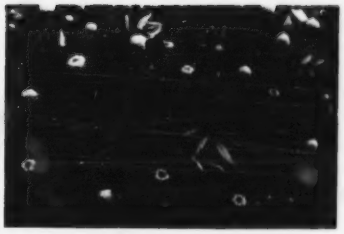
221. The flowers are daisy-like, single, and about ½ inch in diameter. Flower colors are yellow or cream. If dusty miller is grown for foliage effect, the flowers should be removed.

Dusty miller grows 12 inches tall and has a round growth habit. It does well in full sun and dry soil. Dusty miller is excellent as an edging plant or foliage plant. The white color contrasts well with bright reds such as those of *Salvia splendens*. 'Silver Lace' (#220) is an example of a cultivar with finely cut silver foliage. Dusty miller is also listed under the old name of *Cineraria maritima*.

222. ***Tagetes erecta*** **Compositae**
(ta-jee'teez e-rek'ta) Habitat: Native to Mexico
AFRICAN MARIGOLD, BIG MARIGOLD, AZTEC MARIGOLD

The leaves of African marigold are opposite, pinnately divided into serrate segments, and highly scented. The scent strikes some as very pleasant and others as unpleasant. The flowers are arranged in solitary heads, 3 to 5 inches across. Flower colors are yellow, orange and gold. Flowering is all season long. It is common to see these flowers in magnificent display even as the first cold autumn nights arrive.

223. *Tagetes* does well in full sun and will tolerate dry soils but prefers moist, well-drained ones. This species is now known as African-American marigold. It is useful for cutting, background, or bedding purposes. 'Inca' (#222) — 18 inches, and 'Moonshot' (shown here in the foreground) — 14 inches, are useful for bedding, while the taller growing cultivars, such as 'Crackerjack' — 40 inches, can be used for background or cutting purposes.



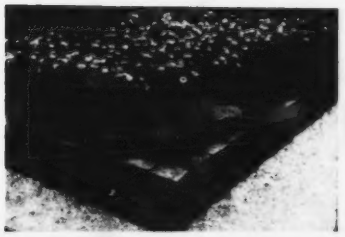
224. ***Tagetes patula*** **Compositae**
(ta-jee'teez pat'u-la) Habitat: Native to Mexico
DWARF FRENCH MARIGOLD

Tagetes patula has opposite leaves that are pinnately divided into serrate segments. The foliage is highly scented. As with *Tagetes erecta*, the scent of this species strikes some gardeners as being very pleasant and others as unpleasant. Dwarf French marigold is 12 to 15 inches tall and has a round growth habit. The flowers can be single or double. Flower colors are yellow, orange, or red-brown. 'Cinnabar' (shown here) . . .

225. . . . and 'Dainty Marietta' are examples of single flowers.

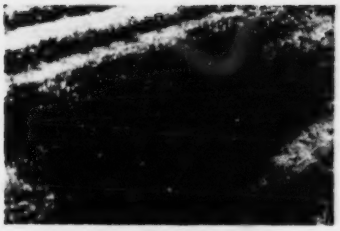
226. 'Honeycomb' . . .

227. . . . and 'Queen Sophia' are double-flowered cultivars.



228. Dwarf French marigold is excellent for edging and bedding purposes.

229. It should be planted in full sun in well-drained soil. Like the petunia, moss rose, and a few others, this is one of the standards for flower beds.



230. ***Talinum paniculatum*** **Portulacaceae**

(ta-lie'num pan-ik-u-lay'tum) Habitat: Native to southern United States and Central America

JEWELS-OF-OPAL, FAMEFLOWER

Jewels-of-opal is an unusual bedding plant that is seldom seen in the garden. The leaves are basal and have a waxy appearance. Plant height is 2 feet, most of which is the multi-branched floral inflorescence.

231. The flowers are red to pinkish and are borne on a 10-inch panicle. They usually last only a few hours, but there are numerous buds which provide a continuous display.

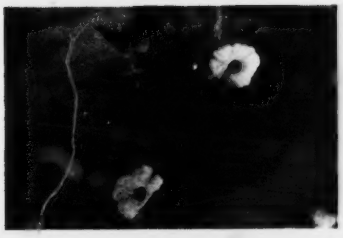
Talinum should be planted in full sun. It does best in soil that is maintained on the dry side.

232. ***Thunbergia alata*** **Acanthaceae**

(thun-ber'jee-a a-lay'ta) Habitat: Native to South Africa

BLACK-EYED SUSAN VINE, CLOCK VINE

The leaves of this species are opposite, triangular with a cordate or hastate leaf base. A good identification feature is the winged petiole. Funnel-shaped flowers are borne on axillary stems.



233. The corolla is yellow, white, or orange and the throat is a dark purple. Black-eyed Susan vine is a climbing vine that is used on a trellis or in hanging baskets. Flowering is from July to September.

Thunbergia alata requires a moist, fertile soil and partial shade. When provided good cultural conditions, black-eyed Susan vine is a dense grower, covering supports with foliage and flowers.

234. ***Tithonia rotundifolia*** **Compositae**

(ti-tho'nee-a ro-tun-dif-o'lee-a) Habitat: Native to Central America

MEXICAN SUNFLOWER, TITHONIA

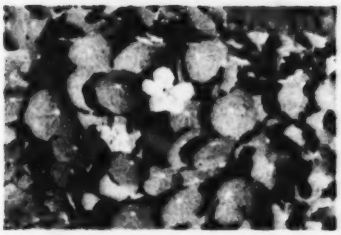
Mexican sunflower is a coarse-textured, erect plant growing to 6 feet tall. The leaves are alternate, ovate to triangular with a cordate leaf base. The leaf surface has a velvet texture. The flowers are 3 inches across with orange-scarlet ray flowers and orange-yellow disk flowers. Flowering is from mid-July to frost.

235. *Tithonia* can be used in the background of the border, as a screen, or as a cut flower. In the very limited list of tall-growing annuals, *Tithonia* isn't too bad a choice. 'Sundance,' which grows 24 to 36 inches tall, is more compact than the species. Mexican sunflower grows in full sun, tolerates intense heat and dry conditions, and continues to flower.

236. ***Torenia fournieri*** **Scrophulariaceae**
(to-ree'nee-a for-near'i) Habitat: Native to China
WISHBONE FLOWER, BLUEWINGS, TORENIA

Wishbone flower is a compact, round plant that is 6 to 12 inches tall. The flower is characterized by a corolla with a pale blue upper lip and a lower lip with three purplish-blue lobes. The throat of the flower has a pair of yellow stamens positioned in the shape of a wishbone, hence the common name. Flowering is from June to October if the cultural requirements are met.

237. *Torenia* requires shade and moist soil. It has a tendency to fade in a dry atmosphere. Wishbone flower is used in the border, in pots and in hanging baskets.



238. ***Tropaeolum majus*** **Tropaeolaceae**
(tro-pee'o-lum may'jus) Habitat: Native to South America
NASTURTIUM, INDIAN CRESS

The garden nasturtium has orbicular or reniform leaves with the petiole attached to the center of the leaf. "Nasturtium" is derived from the Latin for *cress* and refers to the biting, pungent flavor of the leaves, which resembles the flavor of watercress (*Nasturtium officinale*).

239. The flowers are orange, yellow, red, white or bicolored and appear from May to October. There are singles, semi-doubles and doubles.

240. The growth habit is bushy or semi-t iling with a 12-inch height. Nasturtium is good as a cut flower, in a flower border, or in hanging baskets. This species should be grown in full sun and well-drained soil. Highly fertile soil will produce abundant foliage and few flowers.

241. ***Verbena x hybrida*** **Verbenaceae**
(ver-bee'na hi'brid-a) Habitat: Native to tropics and subtropics
GARDEN VERBENA

Garden verbena is a popular and attractive bedding plant which is fairly dependable. It will often cease blooming during periods of prolonged heat and drought, but gradually resumes flowering when the weather cools in the fall. Verbena is divided into two groups. The spreading type is more procumbent, while the upright type is free-branching with a bushy habit. The height of verbena is 9 to 14 inches.

242. Flower colors are white, pink, red, blue, lavender, or purple. Verbena can be utilized as an edging plant, as a bedding plant, in window boxes, or in rock gardens. 'Sangria' (shown here) is a spreading cultivar with wine-red flowers.

243. 'Trinidad' is a 1985 All-American winner with bright rose-pink flowers.

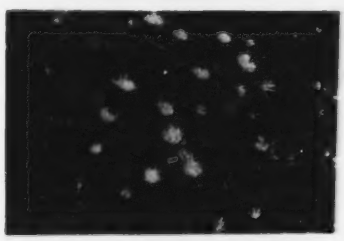
244. ***Viola* x *wittrockiana*** **Violaceae**
(vi'o-la wit-rock-ee-ay'na) Hybrid origin
PANSY, LADIES-DELIGHT

The garden pansy is a tender perennial that is grown as an annual. The flowers are large, 1 to 4 inches across, and usually have three colors. The pattern of the flower colors resembles a "smiling face." Flower colors are purple, white, blue, red, apricot, brown, buff, yellow or combinations of these colors. Flowering usually occurs from May to July or earlier. Pansy is a cool season plant; summer heat often reduces flowering.

Pansy grows 4 to 8 inches tall. The F1 hybrids are best because they are large-flowered, more vigorous, earlier flowering, and more heat tolerant than F2 hybrids or inbred mixtures.

245. ***Xanthisma texana*** **Compositae**
(zan-this'ma tek-san'a) Habitat: Native to Texas
STAR-OF-TEXAS

Star-of-Texas is a little-known annual native to the wilds of Texas. It is 18 to 30 inches tall and has a rounded growth habit.

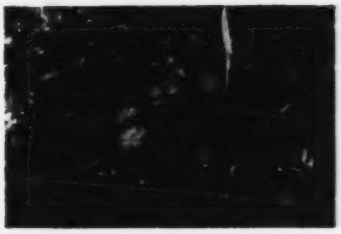


246. The slender branched stems bear terminal heads of yellow, daisy-like flowers. Flowering is from July to September. *Xanthisma* is used for cut flowers or in naturalized areas which have stress conditions. It does well in full sun in hot and dry areas. No wonder it thrives in Texas!

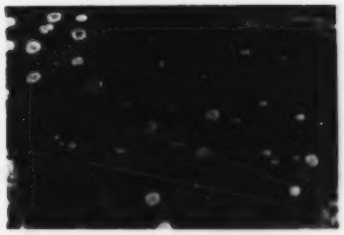
247. ***Zinnia elegans*** **Compositae**
(zin'ee-a el'e-ganz) Habitat: Native to Mexico
ZINNIA

Zinnia is one of the most popular and colorful of all the bedding plants. The possible flower colors are numerous and the sizes of plants varied. Zinnia performs best in full sun and well-drained soils. Powdery mildew is a problem with non-resistant hybrids; consequently, the drier the weather, the less the amount of mildew.

248. Zinnias can be purchased in sizes from 6 up to 36 inches tall. Thus the zinnia can be used as an edging plant, in the border, as a background plant, or for cut flowers. Examples of bedding plants are 'Small World Pink' — 12-14 inches (shown here), . . .

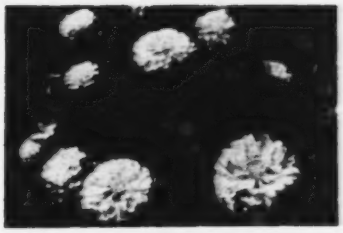


249. . . . 'Peter Pan Mixture' — 14 inches, . . .



250. . . . and 'Button Box' — 12 inches.

251. 'Border Beauty Rose' is an example of a cultivar useful in the border or as a cut flower.



252. 'Pacific Yellow' is a tall selection (24 to 30 inches) useful for background purposes or as cut flowers.

253. *Zinnia angustifolia*, oblong leaf zinnia, is a related species that has merit for garden use. The leaves are linear to linear-lanceolate. The flowers are 1 to 2 inches wide with orange ray flowers. 'Classic' is a commercial cultivar.

254. This species grows to 15 inches. It does well in full sun and dry areas. Oblong leaf zinnia is also listed under the old scientific name, *Zinnia linearis*.

SCIENTIFIC NAME INDEX

		frames
Abutilon hybridum var. savitzii	Malvaceae	21-22
Abutilon pictum	Malvaceae	20
Acalypha wilkesiana	Euphorbiaceae	23-24
Ageratum houstonianum	Compositae	25-27
Alcea rosea	Malvaceae	28-30
Alternanthera ficoidea	Amaranthaceae	31-34
Amaranthus caudatus	Amaranthaceae	38
Amaranthus tricolor	Amaranthaceae	35-37
Antirrhinum majus	Scrophulariaceae	39-41
Arctotis stoechadifolia	Compositae	42-43
Begonia x semperflorens-cultorum	Begoniaceae	44-48
Begonia x tuberhybrida	Begoniaceae	49-50
Bellis perennis	Compositae	51-52
Brachycome iberidifolia	Compositae	53-54
Brassica oleracea	Cruciferae	55-58
Browallia speciosa	Solanaceae	59-60
Calceolaria crenatiflora	Scrophulariaceae	61-62
Calendula officinalis	Compositae	63-65
Callistephus chinensis	Compositae	66-67
Capsicum annuum	Solanaceae	68-70
Catharanthus roseus	Apocynaceae	71-72
Celosia cristata	Amaranthaceae	73-75
Centaurea cyanus	Compositae	76-77
Chrysanthemum parthenium	Compositae	78-79
Cleome hassleriana	Capparaceae	80-81
Coleus x hybridus	Labiatae	82-84
Coreopsis tinctoria	Compositae	85-86
Cosmos bipinnatus	Compositae	90
Cosmos sulphureus	Compositae	87-89
Cuphea ignea	Lythraceae	91-93
Cuphea x purpurea	Lythraceae	94-95
Dahlia hybrids	Compositae	96-97
Dianthus barbatus	Caryophyllaceae	101
Dianthus caryophyllus	Caryophyllaceae	98
Dianthus chinensis	Caryophyllaceae	99-100
Dimorphotheca sinuata	Compositae	102-103
Dyssodia tenuiloba	Compositae	104-105
Eschscholzia californica	Papaveraceae	106-107
Euphorbia cyathophora	Euphorbiaceae	108-109
Gaillardia pulchella	Compositae	110-112
Gazania rigens	Compositae	113-115
Gerbera jamesonii	Compositae	116-117
Gomphrena globosa	Amaranthaceae	118-120
Gypsophila elegans	Caryophyllaceae	121-122
Helianthus annuus	Compositae	123-125
Helichrysum bracteatum	Compositae	126-127
Helichrysum petiolatum	Compositae	128-129
Heliotropium arborescens	Boraginaceae	130-131
Hypoestes phyllostachya	Acanthaceae	132-133
Impatiens balsamina	Balsaminaceae	134-135
Impatiens wallerana	Balsaminaceae	136-139
Ipomoea tricolor	Convolvulaceae	140-141
Iresine herbstii	Amaranthaceae	142-143
Kochia scoparia forma trichophylla	Chenopodiaceae	144-146
Lantana camara	Verbenaceae	147-149
Lathyrus odoratus	Leguminosae	150-151
Lavatera trimestris	Malvaceae	152-153
Limonium sinuatum	Plumbaginaceae	154-155
Linaria maroccana	Scrophulariaceae	156-157
Lobelia erinus	Lobeliaceae	158-160
Lobularia maritima	Cruciferae	161-163
Lonas annua	Compositae	164-165
Matthiola incana	Cruciferae	166-167
Mirabilis jalapa	Nyctaginaceae	168-169
Moluccella laevis	Labiatae	170-171
Nicotiana alata	Solanaceae	172-174
Nierembergia hippomanica	Solanaceae	175-176
Nigella damascena	Ranunculaceae	177-178
Ocimum basilicum	Labiatae	179-181
Pelargonium x hortorum	Geraniaceae	182-184
Pelargonium peltatum	Geraniaceae	185-186
Pennisetum setaceum	Gramineae	187-189
Pentas lanceolata	Rubiaceae	190-191
Petunia x hybrida	Solanaceae	192-194
Phlox drummondi	Polemoniaceae	195-196
Polygonum capitatum	Polygonaceae	197-199
Portulaca grandiflora	Portulacaceae	200-201
Ricinus communis	Euphorbiaceae	202-203
Rudbeckia hirta var. pulcherrima	Compositae	204-206
Salpiglossis sinuata	Solanaceae	207-208
Salvia farinacea	Labiatae	209-212
Salvia splendens	Labiatae	213-215
Sanvitalia procumbens	Compositae	216-217
Scabiosa atropurpurea	Dipsacaceae	218-219
Senecio cineraria	Compositae	220-221
Tagetes erecta	Compositae	222-223
Tagetes patula	Compositae	224-229
Talinum paniculatum	Portulacaceae	230-231
Thunbergia alata	Acanthaceae	232-233
Tithonia rotundifolia	Compositae	234-235
Torenia fournieri	Scrophulariaceae	236-237
Tropaeolum majus	Tropaeolaceae	238-240
Verbena x hybrida	Verbenaceae	241-243
Viola x wittrockiana	Violaceae	244
Xanthisma texana	Compositae	245-246
Zinnia angustifolia	Compositae	253-254
Zinnia elegans	Compositae	247-252

COMMON NAME INDEX

	frames
African daisy	42-43, 102-103
African daisy, blue-eyed	42-43
ageratum, golden	164-165
ageratum, Mexican	25-27
ageratum, yellow	164-165
alternanthera, garden	31-34
amaranth, feathered	73-75
amaranth, globe	118-120
amethyst flower	59-60
arctotis	42-43
aster, annual	66-67
aster, China	66-67
baby's breath, annual	121-122
bachelor's-button	76-77
Barberton daisy	116-117
basil, common	179-181
beauty-of-the-night	168-169
beef plant	142-143
beefsteak plant	23-24, 142-143
begonia, bedding	44-48
begonia, fibrous-rooted	44-48
begonia, tuberous	49-50
begonia, wax	44-48
bells-of-Ireland	170-171
belvedere	144-146
black-eyed Susan	204-206
black-eyed Susan vine	232-233
blanket flower	110-112
bloodleaf	142-143
bluebottle	76-77
bluewings	236-237
browallia	59-60
browallia, lovely	59-60
burning bush	144-146
bush red pepper	68-70
busy Lizzie	136-139
calceolaria	61-62
calendula	63-65
California poppy	106-107
calliopsis	85-86
Cape marigold	102-103
carnation	98
castor bean	202-203
castor-oil-plant	202-203
chalk plant	121-122
chicken-gizzard	142-143
cigar flower	94-95
cigar plant	94-95
cigar plant, Mexican	91-93
cleome	80-81
clock vine	232-233
clove pink	98
cockscomb	73-75
coleus	82-84
common stock	166-167
copperleaf	23-24, 31-34
coreopsis, annual	85-86
coreopsis, golden	85-86
cornflower	76-77
cosmos, common	90
cosmos, Klondike	87-89
cosmos, orange	87-89
cosmos, yellow	87-89
cup flower	175-176
Dahlberg daisy	104-105
dahlia, garden	96-97
daisy, African	42-43, 102-103
daisy, Barberton	116-117
daisy, blue-eyed African	42-43
daisy, Dahlberg	104-105
daisy, English	51-52
daisy, gloriosa	204-206
daisy, swan river	53-54
daisy, Transvaal	116-117
daisy, true	51-52
daisy, veldt	116-117
divine flower	98
dusty miller	220-221
English bull's-eye	204-206
English daisy	51-52
fameflower	230-231
feathered amaranth	73-75
feverfew	78-79
fiddler's spurge	108-109
firebush	144-146
fire-dragon	23-24
fire-on-the-mountain	108-109
flossflower	25-27
flowering maple	20-22
fountain grass	187-189
four-o'clock	168-169
freckle-face	132-133
gaillardia, annual	110-112
garden balsam	134-135
gazania	113-115
geranium	182-186
geranium, bedding	182-184
geranium, ivy-leaved	185-186
geranium, zonal	182-184
gerbera	116-117
gillyflower	166-167
globe amaranth	118-120
gloriosa daisy	204-206
golden ageratum	164-165
golden-fleece	104-105
gomphrena	118-120
heliotrope	130-131
hollyhock	28-30
Indian blanket	110-112
Indian cress	238-240
Irish bells	170-171
Jacob's-coat	23-24
jewels-of-opal	230-231
Joseph's-coat	31-34, 35-37
kale, flowering	55-58
kale, ornamental	55-58
ladies-delight	244
lantana	147-149
linaria, annual	156-157
lobelia	158-160
lobelia, edging	158-160
love-in-a-mist	177-178
love-lies-bleeding	38
marigold, African	222-223
marigold, Aztec	222-223
marigold, big	222-223
marigold, Cape	102-103
marigold, dwarf French	224-229
marigold, pot	63-65
marvel-of-Peru	168-169
mealycup sage	209-212
measles plant	132-133
Mexican fire plant	108-109
Molucca palm	170-171
morning-glory, common	140-141
moss rose	200-201
mourning-bride	218-219
nasturtium	238-240
nierembergia	175-176
notchleaf sea lavender	154-155
notchleaf statice	154-155
old-maid	71-72
ox-eye daisy, yellow	204-206
painted leaf	108-109
painted tongue	207-208
palma Christi	202-203
pansy	244
patient Lucy	136-139
patient plant	136-139
periwinkle, Madagascar	71-72
periwinkle, rose	71-72
petunia	192-194
phlox, annual	195-196
phlox, Drummond	195-196
pincushion flower	218-219
pink, annual	99-100
pink, China	99-100
pink, rainbow	99-100
pinkhead knotweed	197-199
pocketbook flower	61-62
polka-dot plant	132-133
polka-dot plant, pink	132-133
polygonum	197-199
portulaca	200-201
rose balsam	134-135
rose mallow	152-153
rose moss	200-201
salvia, red	213-215
sapphire flower	59-60
scarlet sage	213-215
shellflower	170-171
slipper flower	61-62
slipperwort	61-62
snapdragon	39-41
spider flower	80-81
star cluster	190-191
star-of-Texas	245-246
stock, common	166-167
stock, ten-weeks	166-167
strawflower	125-129
sultana	136-139
summer cypress	144-146
sun plant	200-201
sunflower, common	123-125
sunflower, Mexican	234-235
swan river daisy	53-54
sweet alyssum	161-163
sweet basil	179-181
sweet pea	150-151
sweet scabious	218-219
sweet William	101
tampala	35-37
tassel flower	38
ten-weeks stock	166-167
Texas pride	195-196
tithonia	234-235
toadflax	156-157
tobacco, flowering	172-174
tobacco, jasmine	172-174
tobacco, ornamental	172-174
torenia	236-237
touch-me-not	134-135
Transvaal daisy	116-117
treasure flower	113-115
true daisy	51-52
tuberous begonia	49-50
veldt daisy	116-117
verbena, garden	241-243
wax begonia	44-48
wax plant	44-48
wishbone flower	236-237
wonder tree	202-203
yellow ageratum	164-165
yellow sage	147-149
zinnia	247-254
zinnia, creeping	216-217
zinnia, oblong leaf	253-254
zinnia, trailing	216-217